



#3

Sequence Listing

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Desnoyers, Luc
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Pan, James
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| Cys | Phe | Lys | Ser | Val | Leu | Leu | Ile | Tyr | Thr | Phe | Ile | Phe | Trp | Ile | 20 | 25 | 30 | |
| Thr | Gly | Val | Ile | Leu | Leu | Ala | Val | Gly | Ile | Trp | Gly | Lys | Val | Ser | 35 | 40 | 45 | |
| Leu | Glu | Asn | Tyr | Phe | Ser | Leu | Leu | Asn | Glu | Lys | Ala | Thr | Asn | Val | 50 | 55 | 60 | |
| Pro | Phe | Val | Leu | Ile | Ala | Thr | Gly | Thr | Val | Ile | Ile | Leu | Leu | Gly | 65 | 70 | 75 | |
| Thr | Phe | Gly | Cys | Phe | Ala | Thr | Cys | Arg | Ala | Ser | Ala | Trp | Met | Leu | 80 | 85 | 90 | |
| Lys | Leu | Tyr | Ala | Met | Phe | Leu | Thr | Leu | Val | Phe | Leu | Val | Glu | Leu | 95 | 100 | 105 | |
| Val | Ala | Ala | Ile | Val | Gly | Phe | Val | Phe | Arg | His | Glu | Ile | Lys | Asn | 110 | 115 | 120 | |
| Ser | Phe | Lys | Asn | Asn | Tyr | Glu | Lys | Ala | Leu | Lys | Gln | Tyr | Asn | Ser | 125 | 130 | 135 | |
| Thr | Gly | Asp | Tyr | Arg | Ser | His | Ala | Val | Asp | Lys | Ile | Gln | Asn | Thr | 140 | 145 | 150 | |
| Leu | His | Cys | Cys | Gly | Val | Thr | Asp | Tyr | Arg | Asp | Trp | Thr | Asp | Thr | 155 | 160 | 165 | |
| Asn | Tyr | Tyr | Ser | Glu | Lys | Gly | Phe | Pro | Lys | Ser | Cys | Cys | Lys | Leu | 170 | 175 | 180 | |
| Glu | Asp | Cys | Thr | Pro | Gln | Arg | Asp | Ala | Asp | Lys | Val | Asn | Asn | Glu | 185 | 190 | 195 | |
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| Val | Val | Ala | Gly | Ile | Ser | Phe | Gly | Val | Ala | Cys | Phe | Gln | Leu | Ile | 215 | 220 | 225 | |
| Gly | Ile | Phe | Leu | Ala | Tyr | Cys | Xaa | Ser | Arg | Ala | Ile | Thr | Asn | Asn | 230 | 235 | 240 | |
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| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
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| Phe | Val | Ser | Gly | Phe | Leu | Leu | Phe | Arg | Ser | Leu | Pro | Arg | His | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Leu | Val | Gln | Ser | Lys | Leu | Phe | Pro | Phe | Tyr | Phe | His | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
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| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| | | | | | | | | | | | | | | |
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| Leu | Glu | Pro | Arg | Thr | Thr | Ala | Ala | Met | Trp | Ala | Leu | Gln | Thr | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Lys | Glu | Arg | Gly | Leu | Gly | Gly | Glu | Val | Pro | Gly | Ser | His | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Asp | Pro | Tyr | Arg | Gln | Leu | Arg | Glu | Lys | Asp | Pro | Lys | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Leu | Arg | Gln | Asn | Phe | Phe | Arg | Tyr | His | Gly | Leu | Ser | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Asn | Leu | Gly | Cys | Val | Leu | Ser | Asn | Gly | Leu | Cys | Leu | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | |
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| Gly | Leu | Ala | Leu | Glu | Ile | Arg | Ser | Leu |
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<223> Transmembrane Domain

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35 40 45
Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
50 55 60
Leu Thr Glu Ser Gly Ser Thr Ala Leu Lys Ala Glu Thr Ser Glu
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Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
80 85 90
Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
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Leu Trp Gly Leu Ile Asn Asn Ala Gly Val Pro Gly Val Leu Ala
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
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| Val | Asn | Leu | Phe | Gly | Leu | Ile | Ser | Val | Thr | Leu | Asn | Met | Leu | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Val | Lys | Lys | Ala | Gln | Gly | Arg | Val | Ile | Asn | Val | Ser | Ser | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Gly | Arg | Leu | Ala | Ile | Val | Gly | Gly | Gly | Tyr | Thr | Pro | Ser | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Ala | Val | Glu | Gly | Phe | Asn | Asp | Ser | Leu | Arg | Arg | Asp | Met | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Phe | Gly | Val | His | Val | Ser | Cys | Ile | Glu | Pro | Gly | Leu | Phe | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Asn | Leu | Ala | Asp | Pro | Val | Lys | Val | Ile | Glu | Lys | Lys | Leu | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Trp | Glu | Gln | Leu | Ser | Pro | Asp | Ile | Lys | Gln | Gln | Tyr | Gly | Glu | |
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| Gly | Tyr | Ile | Glu | Lys | Ser | Leu | Asp | Lys | Leu | Lys | Gly | Asn | Lys | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Val | Asn | Met | Asp | Leu | Ser | Pro | Val | Val | Glu | Cys | Met | Asp | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Leu | Thr | Ser | Leu | Phe | Pro | Lys | Thr | His | Tyr | Ala | Ala | Gly | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Ala | Lys | Ile | Phe | Trp | Ile | Pro | Leu | Ser | His | Met | Pro | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Gln | Asp | Phe | Leu | Leu | Leu | Lys | Gln | Lys | Ala | Glu | Leu | Ala | Asn | |
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Pro Lys Ala Val

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<220>

<221> TRANSMEM

<222> 21-40 and 84-105

<223> Transmembrane Domain (type II)

<400> 12

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| | 20 | 25 | 30 |
| Val Ala Thr Thr | Val Val Met Tyr Pro | Pro Pro Pro Pro Pro | Pro |
| | 35 | 40 | 45 |
| His Arg Asp Phe | Ile Ser Val Thr Leu | Ser Phe Gly Glu Ser | Tyr |
| | 50 | 55 | 60 |
| Asp Asn Ser Lys | Ser Trp Arg Arg Arg | Ser Cys Trp Arg Lys | Trp |
| | 65 | 70 | 75 |
| Lys Gln Leu Ser | Arg Leu Gln Arg Asn | Met Ile Leu Phe Leu | Leu |
| | 80 | 85 | 90 |
| Ala Phe Leu Leu | Phe Cys Gly Leu Leu | Phe Tyr Ile Asn Leu | Ala |
| | 95 | 100 | 105 |
| Asp His Trp Lys | Ala Leu Ala Phe Arg | Leu Glu Glu Glu Gln | Lys |
| | 110 | 115 | 120 |
| Met Arg Pro Glu | Ile Ala Gly Leu Lys | Pro Ala Asn Pro Pro | Val |
| | 125 | 130 | 135 |
| Leu Pro Ala Pro | Gln Lys Ala Asp Thr | Asp Pro Glu Asn Leu | Pro |
| | 140 | 145 | 150 |
| Glu Ile Ser Ser | Gln Lys Thr Gln Arg | His Ile Gln Arg Gly | Pro |
| | 155 | 160 | 165 |
| Pro His Leu Gln | Ile Arg Pro Pro Ser | Gln Asp Leu Lys Asp | Gly |
| | 170 | 175 | 180 |
| Thr Gln Glu Glu | Ala Thr Lys Arg Gln | Glu Ala Pro Val Asp | Pro |
| | 185 | 190 | 195 |
| Arg Pro Glu Gly | Asp Pro Gln Arg Thr | Val Ile Ser Trp Arg | Gly |
| | 200 | 205 | 210 |
| Ala Val Ile Glu | Pro Glu Gln Gly Thr | Glu Leu Pro Ser Arg | Arg |
| | 215 | 220 | 225 |
| Ala Glu Val Pro | Thr Lys Pro Pro Leu | Pro Pro Ala Arg Thr | Gln |
| | 230 | 235 | 240 |
| Gly Thr Pro Val | His Leu Asn Tyr Arg | Gln Lys Gly Val Ile | Asp |
| | 245 | 250 | 255 |
| Val Phe Leu His | Ala Trp Lys Gly Tyr | Arg Lys Phe Ala Trp | Gly |
| | 260 | 265 | 270 |
| His Asp Glu Leu | Lys Pro Val Ser Arg | Ser Phe Ser Glu Trp | Phe |
| | 275 | 280 | 285 |
| Gly Leu Gly Leu | Thr Leu Ile Asp Ala | Leu Asp Thr Met Trp | Ile |

| 290 | | | | | | | | | | 295 | | | | | 300 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Gly | Leu | Arg | Lys | Glu | Phe | Glu | Glu | Ala | Arg | Lys | Trp | Val | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Lys | Lys | Leu | His | Phe | Glu | Lys | Asp | Val | Asp | Val | Asn | Leu | Phe | Glu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ser | Thr | Ile | Arg | Ile | Leu | Gly | Gly | Leu | Leu | Ser | Ala | Tyr | His | Leu | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Ser | Gly | Asp | Ser | Leu | Phe | Leu | Arg | Lys | Ala | Glu | Asp | Phe | Gly | Asn | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Arg | Leu | Met | Pro | Ala | Phe | Arg | Thr | Pro | Ser | Lys | Ile | Pro | Tyr | Ser | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Asp | Val | Asn | Ile | Gly | Thr | Gly | Val | Ala | His | Pro | Pro | Arg | Trp | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Ser | Asp | Ser | Thr | Val | Ala | Glu | Val | Thr | Ser | Ile | Gln | Leu | Glu | Phe | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Arg | Glu | Leu | Ser | Arg | Leu | Thr | Gly | Asp | Lys | Lys | Phe | Gln | Glu | Ala | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Val | Glu | Lys | Val | Thr | Gln | His | Ile | His | Gly | Leu | Ser | Gly | Lys | Lys | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Asp | Gly | Leu | Val | Pro | Met | Phe | Ile | Asn | Thr | His | Ser | Gly | Leu | Phe | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Thr | His | Leu | Gly | Val | Phe | Thr | Leu | Gly | Ala | Arg | Ala | Asp | Ser | Tyr | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Tyr | Glu | Tyr | Leu | Leu | Lys | Gln | Trp | Ile | Gln | Gly | Gly | Lys | Gln | Glu | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Thr | Gln | Leu | Leu | Glu | Asp | Tyr | Val | Glu | Ala | Ile | Glu | Gly | Val | Arg | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Thr | His | Leu | Leu | Arg | His | Ser | Glu | Pro | Ser | Lys | Leu | Thr | Phe | Val | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Gly | Glu | Leu | Ala | His | Gly | Arg | Phe | Ser | Ala | Lys | Met | Asp | His | Leu | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Val | Cys | Phe | Leu | Pro | Gly | Thr | Leu | Ala | Leu | Gly | Val | Tyr | His | Gly | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Leu | Pro | Ala | Ser | His | Met | Glu | Leu | Ala | Gln | Glu | Leu | Met | Glu | Thr | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Cys | Tyr | Gln | Met | Asn | Arg | Gln | Met | Glu | Thr | Gly | Leu | Ser | Pro | Glu | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ile | Val | His | Phe | Asn | Leu | Tyr | Pro | Gln | Pro | Gly | Arg | Arg | Asp | Val | | | | | |

| | 575 | 580 | 585 |
|-----------------|---------------------|---------------------|-----|
| Glu Val Lys Pro | Ala Asp Arg His Asn | Leu Leu Arg Pro Glu | Thr |
| | 590 | 595 | 600 |
| Val Glu Ser Leu | Phe Tyr Leu Tyr Arg | Val Thr Gly Asp Arg | Lys |
| | 605 | 610 | 615 |
| Tyr Gln Asp Trp | Gly Trp Glu Ile Leu | Gln Ser Phe Ser Arg | Phe |
| | 620 | 625 | 630 |
| Thr Arg Val Pro | Ser Gly Gly Tyr Ser | Ser Ile Asn Asn Val | Gln |
| | 635 | 640 | 645 |
| Asp Pro Gln Lys | Pro Glu Pro Arg Asp | Lys Met Glu Ser Phe | Phe |
| | 650 | 655 | 660 |
| Leu Gly Glu Thr | Leu Lys Tyr Leu Phe | Leu Leu Phe Ser Asp | Asp |
| | 665 | 670 | 675 |
| Pro Asn Leu Leu | Ser Leu Asp Ala Tyr | Val Phe Asn Thr Glu | Ala |
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| His Pro Leu Pro | Ile Trp Thr Pro | Ala | |
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<213> Homo sapiens

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 <223> cAMP- and cGMP-dependent protein kinase phosphorylation site.

<220>
 <221> TRANSMEM
 <222> 29-49
 <223> Transmembrane domain (type II).

<220>
 <221> misc_feature
 <222> 154-158
 <223> N-glycosylation site.

<220>
 <221> misc_feature
 <222> 226-233
 <223> Tyrosine kinase phosphorylation site.

<400> 17
 Met Phe Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp
 1 5 10 15
 Gly Arg Ser Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser
 20 25 30
 Val Phe His Leu Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser
 35 40 45

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|
| Leu | Leu | Trp | Leu | Gln | Leu | Ser | Cys | Ser | Gly | Asp | Val | Ala | Arg | Ala | | | 50 | 55 | 60 |
| Val | Arg | Gly | Gln | Gly | Gln | Glu | Thr | Ser | Gly | Pro | Pro | Arg | Ala | Cys | | | 65 | 70 | 75 |
| Pro | Pro | Glu | Pro | Pro | Pro | Glu | His | Trp | Glu | Glu | Asp | Ala | Ser | Trp | | | 80 | 85 | 90 |
| Gly | Pro | His | Arg | Leu | Ala | Val | Leu | Val | Pro | Phe | Arg | Glu | Arg | Phe | | | 95 | 100 | 105 |
| Glu | Glu | Leu | Leu | Val | Phe | Val | Pro | His | Met | Arg | Arg | Phe | Leu | Ser | | | 110 | 115 | 120 |
| Arg | Lys | Lys | Ile | Arg | His | His | Ile | Tyr | Val | Leu | Asn | Gln | Val | Asp | | | 125 | 130 | 135 |
| His | Phe | Arg | Phe | Asn | Arg | Ala | Ala | Leu | Ile | Asn | Val | Gly | Phe | Leu | | | 140 | 145 | 150 |
| Glu | Ser | Ser | Asn | Ser | Thr | Asp | Tyr | Ile | Ala | Met | His | Asp | Val | Asp | | | 155 | 160 | 165 |
| Leu | Leu | Pro | Leu | Asn | Glu | Glu | Leu | Asp | Tyr | Gly | Phe | Pro | Glu | Ala | | | 170 | 175 | 180 |
| Gly | Pro | Phe | His | Val | Ala | Ser | Pro | Glu | Leu | His | Pro | Leu | Tyr | His | | | 185 | 190 | 195 |
| Tyr | Lys | Thr | Tyr | Val | Gly | Gly | Ile | Leu | Leu | Leu | Ser | Lys | Gln | His | | | 200 | 205 | 210 |
| Tyr | Arg | Leu | Cys | Asn | Gly | Met | Ser | Asn | Arg | Phe | Trp | Gly | Trp | Gly | | | 215 | 220 | 225 |
| Arg | Glu | Asp | Asp | Glu | Phe | Tyr | Arg | Arg | Ile | Lys | Gly | Ala | Gly | Leu | | | 230 | 235 | 240 |
| Gln | Leu | Phe | Arg | Pro | Ser | Gly | Ile | Thr | Thr | Gly | Tyr | Lys | Thr | Phe | | | 245 | 250 | 255 |
| Arg | His | Leu | His | Asp | Pro | Ala | Trp | Arg | Lys | Arg | Asp | Gln | Lys | Arg | | | 260 | 265 | 270 |
| Ile | Ala | Ala | Gln | Lys | Gln | Glu | Gln | Phe | Lys | Val | Asp | Arg | Glu | Gly | | | 275 | 280 | 285 |
| Gly | Leu | Asn | Thr | Val | Lys | Tyr | His | Val | Ala | Ser | Arg | Thr | Ala | Leu | | | 290 | 295 | 300 |
| Ser | Val | Gly | Gly | Ala | Pro | Cys | Thr | Val | Leu | Asn | Ile | Met | Leu | Asp | | | 305 | 310 | 315 |
| Cys | Asp | Lys | Thr | Ala | Thr | Pro | Trp | Cys | Thr | Phe | Ser | | | | | | 320 | 325 | |

<210> 18
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 18
gcgaacgctt cgaggagtcc tgg 23

<210> 19
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 19
gcagtgcggg aagccacatg gtac 24

<210> 20
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 20
cttcctgagc aggaagaaga tccggcacca catctacgtg ctcaac 46

<210> 21
<211> 494
<212> DNA
<213> Homo sapiens

<400> 21
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gactggtcgg tgcccagaaa gtctcttctg ccactgacgc ccccatcagg 150
gattgggcct tctttccccc ttcttttctg tgtctcctgc ctcatcggcc 200
tgccatgacc tgacagcaag ccagccccg tggggaaggg gagaaagtgg 250
gggatggcta agaaagctgg gagataggga acagaagagg gtagtgggtg 300
ggctaggggg gctgccttat ttaaagtggg tgtttatgat tcttatacta 350
at ttatacaa agatattaag gccctgttca ttaagaaatt gttcccttcc 400
cctgtgttca atgtttgtaa agattgttct gtgtaaatat gtctttataa 450

taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494

<210> 22
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-15
<223> Signal peptide.

<220>
<221> misc_feature
<222> 3-18
<223> Growth factor and cytokines receptors family.

<400> 22
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Ser Cys Leu Glu Trp Gly Leu Val Gly Ala Gln Lys Val Ser Ser
20 25 30
Ala Thr Asp Ala Pro Ile Arg Asp Trp Ala Phe Phe Pro Pro Ser
35 40 45
Phe Leu Cys Leu Leu Pro His Arg Pro Ala Met Thr Cys Ser Gln
50 55 60
Ala Gln Pro Arg Gly Glu Gly Glu Lys Val Gly Asp Gly
65 70

<210> 23
<211> 2883
<212> DNA
<213> Homo sapiens

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ggctccgggg cggcccgcta ggccagtgcg ccgccgctcg ccccgagggc 200
cccggcccgc agcatggagc caccggacg ccggcggggc cgcgcgagc 250
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tgggcggccc cgaggggctg gcagggcggc gggcgccgcc gagggcaagg 400
tgggtgtgcag cagcctggaa ctcgcgcagg tcctgcccc agataactctg 450

cccaaccgca cggtcaccct gattctgagt aacaataaga tatccgagct 500
gaagaatggc tcattttctg ggtaagtct ccttgaaaga ttggacctcc 550
gaaacaatct tattagtagt atagatccag gtgccttctg gggactgtca 600
tctctaaaaa gattggatct gacaaacaat cgaataggat gtctgaatgc 650
agacatattt cgaggactca ccaatctggg tcggctaaac ctttcgggga 700
atttgttttc ttcattatct caaggaactt ttgattatct tgcgtcatta 750
cggctcttgg aattccagac tgagtatctt ttgtgtgact gtaacatact 800
gtggatgcat cgctgggtaa aggagaagaa catcacggta cgggatacca 850
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caggagctgt tgacatgcga ccctccgctt gaattgccgt ctttctacat 950
gactccatct catcgccaag ttgtgtttga aggagacagc cttcctttcc 1000
agtgcattggc ttcatatatt gatcaggaca tgcaagtgtt gtggtatcag 1050
gatgggagaa tagttgaaac cgatgaatcg caaggtatth ttgttgaaaa 1100
gaacatgatt cacaactgct ccttgattgc aagtgcccta accatttcta 1150
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gagggaaacc tggataagca gctgagcttt aagtgcaatg tttcaaatac 2000
attttcgagt ctggcactaa aggtatgtta cattctgcaa tcattttaaga 2050
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acatgtgaaa aaattttatt tgacttaaaa gtttatttat ttgttttttt 2350
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tattgaatga atgaacgaaa aaaaaaaaaa aaa 2883

<210> 24
<211> 616
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-33
<223> Signal peptide.

<220>
<221> TRANSMEM
<222> 13-40
<223> Transmembrane domain (type II).

<400> 24

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Glu | Pro | Pro | Gly | Arg | Arg | Arg | Gly | Arg | Ala | Gln | Pro | Pro | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Leu | Pro | Leu | Ser | Leu | Leu | Ala | Leu | Leu | Ala | Leu | Leu | Gly | Gly | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Gly | Gly | Gly | Gly | Gly | Ala | Ala | Ala | Leu | Pro | Ala | Gly | Cys | Lys | His | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Asp | Gly | Arg | Pro | Arg | Gly | Ala | Gly | Arg | Ala | Ala | Gly | Ala | Ala | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Lys | Val | Val | Cys | Ser | Ser | Leu | Glu | Leu | Ala | Gln | Val | Leu | Pro | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Pro | Asp | Thr | Leu | Pro | Asn | Arg | Thr | Val | Thr | Leu | Ile | Leu | Ser | Asn | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asn | Lys | Ile | Ser | Glu | Leu | Lys | Asn | Gly | Ser | Phe | Ser | Gly | Leu | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Leu | Glu | Arg | Leu | Asp | Leu | Arg | Asn | Asn | Leu | Ile | Ser | Ser | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Pro | Gly | Ala | Phe | Trp | Gly | Leu | Ser | Ser | Leu | Lys | Arg | Leu | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Thr | Asn | Asn | Arg | Ile | Gly | Cys | Leu | Asn | Ala | Asp | Ile | Phe | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Leu | Thr | Asn | Leu | Val | Arg | Leu | Asn | Leu | Ser | Gly | Asn | Leu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Ser | Leu | Ser | Gln | Gly | Thr | Phe | Asp | Tyr | Leu | Ala | Ser | Leu | Arg | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Leu | Glu | Phe | Gln | Thr | Glu | Tyr | Leu | Leu | Cys | Asp | Cys | Asn | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Trp | Met | His | Arg | Trp | Val | Lys | Glu | Lys | Asn | Ile | Thr | Val | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asp | Thr | Arg | Cys | Val | Tyr | Pro | Lys | Ser | Leu | Gln | Ala | Gln | Pro | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Gly | Val | Lys | Gln | Glu | Leu | Leu | Thr | Cys | Asp | Pro | Pro | Leu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Pro | Ser | Phe | Tyr | Met | Thr | Pro | Ser | His | Arg | Gln | Val | Val | Phe | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Gly | Asp | Ser | Leu | Pro | Phe | Gln | Cys | Met | Ala | Ser | Tyr | Ile | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Asp | Met | Gln | Val | Leu | Trp | Tyr | Gln | Asp | Gly | Arg | Ile | Val | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |

| | | |
|---|-------------------------|-----|
| Thr Asp Glu Ser Gln Gly Ile Phe Val | Glu Lys Asn Met Ile His | |
| 290 | 295 | 300 |
| Asn Cys Ser Leu Ile Ala Ser Ala Leu Thr Ile Ser Asn Ile Gln | | |
| 305 | 310 | 315 |
| Ala Gly Ser Thr Gly Asn Trp Gly Cys His Val Gln Thr Lys Arg | | |
| 320 | 325 | 330 |
| Gly Asn Asn Thr Arg Thr Val Asp Ile Val Val Leu Glu Ser Ser | | |
| 335 | 340 | 345 |
| Ala Gln Tyr Cys Pro Pro Glu Arg Val Val Asn Asn Lys Gly Asp | | |
| 350 | 355 | 360 |
| Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr Ala Tyr Leu Gln | | |
| 365 | 370 | 375 |
| Cys Thr Arg Asn Thr His Gly Ser Gly Ile Tyr Pro Gly Asn Pro | | |
| 380 | 385 | 390 |
| Gln Asp Glu Arg Lys Ala Trp Arg Arg Cys Asp Arg Gly Gly Phe | | |
| 395 | 400 | 405 |
| Trp Ala Asp Asp Asp Tyr Ser Arg Cys Gln Tyr Ala Asn Asp Val | | |
| 410 | 415 | 420 |
| Thr Arg Val Leu Tyr Met Phe Asn Gln Met Pro Leu Asn Leu Thr | | |
| 425 | 430 | 435 |
| Asn Ala Val Ala Thr Ala Arg Gln Leu Leu Ala Tyr Thr Val Glu | | |
| 440 | 445 | 450 |
| Ala Ala Asn Phe Ser Asp Lys Met Asp Val Ile Phe Val Ala Glu | | |
| 455 | 460 | 465 |
| Met Ile Glu Lys Phe Gly Arg Phe Thr Lys Glu Glu Lys Ser Lys | | |
| 470 | 475 | 480 |
| Glu Leu Gly Asp Val Met Val Asp Ile Ala Ser Asn Ile Met Leu | | |
| 485 | 490 | 495 |
| Ala Asp Glu Arg Val Leu Trp Leu Ala Gln Arg Glu Ala Lys Ala | | |
| 500 | 505 | 510 |
| Cys Ser Arg Ile Val Gln Cys Leu Gln Arg Ile Ala Thr Tyr Arg | | |
| 515 | 520 | 525 |
| Leu Ala Gly Gly Ala His Val Tyr Ser Thr Tyr Ser Pro Asn Ile | | |
| 530 | 535 | 540 |
| Ala Leu Glu Ala Tyr Val Ile Lys Ser Thr Gly Phe Thr Gly Met | | |
| 545 | 550 | 555 |
| Thr Cys Thr Val Phe Gln Lys Val Ala Ala Ser Asp Arg Thr Gly | | |
| 560 | 565 | 570 |

Leu Ser Asp Tyr Gly Arg Arg Asp Pro Glu Gly Asn Leu Asp Lys
575 580 585

Gln Leu Ser Phe Lys Cys Asn Val Ser Asn Thr Phe Ser Ser Leu
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Ala Leu Lys Val Cys Tyr Ile Leu Gln Ser Phe Lys Thr Ile Tyr
605 610 615

Ser

<210> 25

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 25

gaggactcac caatctgggt cggc 24

<210> 26

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 26

aactggaaag gaaggctgtc tccc 24

<210> 27

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 27

gtaaaggaga agaacatcac ggtacgggat accaggtgtg tttatcctaa 50

<210> 28

<211> 683

<212> DNA

<213> Homo sapiens

<400> 28

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ctgacggcgg ccacagtggc cggcgtacat gtgaagcagc agtgggacca 100

gcagaggctt cgtgaaggag ttatcagaga cattgagagg caaattcgga 150

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aaaaagaaaa cattcgtctt ttgggagaac agattatctt gactgagcaa 200
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gtgtgttgat ggagagtagc ttagtagtat cttcatcttt ttttttggtc 350
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gtggagggag agacgctcct gatcgtcgaa tcc 683

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<210> 29
<211> 81
<212> PRT
<213> Homo sapiens

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<220>
<221> sig_peptide
<222> 1-21
<223> Signal peptide.

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Thr Ala Ala Thr Val Ala Gly Val His Val Lys Gln Gln Trp Asp
          20             25             30

Gln Gln Arg Leu Arg Asp Gly Val Ile Arg Asp Ile Glu Arg Gln
          35             40             45

Ile Arg Lys Lys Glu Asn Ile Arg Leu Leu Gly Glu Gln Ile Ile
          50             55             60

Leu Thr Glu Gln Leu Glu Ala Glu Arg Glu Lys Met Leu Leu Ala
          65             70             75

Lys Gly Ser Gln Lys Ser
          80

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<210> 30
<211> 2128
<212> DNA
<213> Homo sapiens

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<400> 30

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tccgtggatt cctctgctaa gaccgctgcc atgccagtga cggtaaccgc 150
caccaccatc acaaccacca cgacgtcatc ttcgggcctg gggccccca 200
tgatcgtggg gtccccctcg gccctgacac agccccctgg tctccttcgc 250
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cagccttgcc agagattggc tccagaattt ttgccaggct tacagaacac 2050
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cccaactatt ctctgtggta tgaaaaag 2128

<210> 31
<211> 322
<212> PRT
<213> Homo sapiens

<400> 31
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Ala Leu Thr Gln Pro Leu Gly Leu Leu Arg Leu Leu Gln Leu Val
35 40 45
Ser Thr Cys Val Ala Phe Ser Leu Val Ala Ser Val Gly Ala Trp
50 55 60
Thr Gly Ser Met Gly Asn Trp Ser Met Phe Thr Trp Cys Phe Cys
65 70 75
Phe Ser Val Thr Leu Ile Ile Leu Ile Val Glu Leu Cys Gly Leu
80 85 90
Gln Ala Arg Phe Pro Leu Ser Trp Arg Asn Phe Pro Ile Thr Phe
95 100 105

| | | | | |
|-----------------|---|-----|-----|-----|
| Ala Cys Tyr Ala | Ala Leu Phe Cys Leu Ser Ala Ser Ile Ile Tyr | 110 | 115 | 120 |
| Pro Thr Thr Tyr | Val Gln Phe Leu Ser His Gly Arg Ser Arg Asp | 125 | 130 | 135 |
| His Ala Ile Ala | Ala Thr Phe Phe Ser Cys Ile Ala Cys Val Ala | 140 | 145 | 150 |
| Tyr Ala Thr Glu | Val Ala Trp Thr Arg Ala Arg Pro Gly Glu Ile | 155 | 160 | 165 |
| Thr Gly Tyr Met | Ala Thr Val Pro Gly Leu Leu Lys Val Leu Glu | 170 | 175 | 180 |
| Thr Phe Val Ala | Cys Ile Ile Phe Ala Phe Ile Ser Asp Pro Asn | 185 | 190 | 195 |
| Leu Tyr Gln His | Gln Pro Ala Leu Glu Trp Cys Val Ala Val Tyr | 200 | 205 | 210 |
| Ala Ile Cys Phe | Ile Leu Ala Ala Ile Ala Ile Leu Leu Asn Leu | 215 | 220 | 225 |
| Gly Glu Cys Thr | Asn Val Leu Pro Ile Pro Phe Pro Ser Phe Leu | 230 | 235 | 240 |
| Ser Gly Leu Ala | Leu Leu Ser Val Leu Leu Tyr Ala Thr Ala Leu | 245 | 250 | 255 |
| Val Leu Trp Pro | Leu Tyr Gln Phe Asp Glu Lys Tyr Gly Gly Gln | 260 | 265 | 270 |
| Pro Arg Arg Ser | Arg Asp Val Ser Cys Ser Arg Ser His Ala Tyr | 275 | 280 | 285 |
| Tyr Val Cys Ala | Trp Asp Arg Arg Leu Ala Val Ala Ile Leu Thr | 290 | 295 | 300 |
| Ala Ile Asn Leu | Leu Ala Tyr Val Ala Asp Leu Val His Ser Ala | 305 | 310 | 315 |
| His Leu Val Phe | Val Lys Val | 320 | | |

<210> 32

<211> 3680

<212> DNA

<213> Homo sapiens

<400> 32

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<210> 33
 <211> 335
 <212> PRT
 <213> Homo sapiens

<400> 33
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 Ser Leu Ala Gln Val Asn Leu Ser Pro Phe Ser His Pro Lys Val
 35 40 45
 His Met Asp Pro Asn Tyr Cys His Pro Ser Thr Ser Leu His Leu
 50 55 60
 Cys Ser Leu Ala Trp Ser Phe Thr Arg Leu Leu His Pro Pro Leu
 65 70 75
 Ser Pro Gly Ile Ser Gln Val Val Lys Asp His Val Thr Lys Pro
 80 85 90
 Thr Ala Met Ala Gln Gly Arg Val Ala His Leu Ile Glu Trp Lys
 95 100 105
 Gly Trp Ser Lys Pro Ser Asp Ser Pro Ala Ala Leu Glu Ser Ala
 110 115 120

| | | | |
|---|-----|-----|-----|
| Phe Ser Ser Tyr Ser Asp Leu Ser Glu Gly Glu Gln Glu Ala Arg | 125 | 130 | 135 |
| Phe Ala Ala Gly Val Ala Glu Gln Phe Ala Ile Ala Glu Ala Lys | 140 | 145 | 150 |
| Leu Arg Ala Trp Ser Ser Val Asp Gly Glu Asp Ser Thr Asp Asp | 155 | 160 | 165 |
| Ser Tyr Asp Glu Asp Phe Ala Gly Gly Met Asp Thr Asp Met Ala | 170 | 175 | 180 |
| Gly Gln Leu Pro Leu Gly Pro His Leu Gln Asp Leu Phe Thr Gly | 185 | 190 | 195 |
| His Arg Phe Ser Arg Pro Val Arg Gln Gly Ser Val Glu Pro Glu | 200 | 205 | 210 |
| Ser Asp Cys Ser Gln Thr Val Ser Pro Asp Thr Leu Cys Ser Ser | 215 | 220 | 225 |
| Leu Cys Ser Leu Glu Asp Gly Leu Leu Gly Ser Pro Ala Arg Leu | 230 | 235 | 240 |
| Ala Ser Gln Leu Leu Gly Asp Glu Leu Leu Leu Ala Lys Leu Pro | 245 | 250 | 255 |
| Pro Ser Arg Glu Ser Ala Phe Arg Ser Leu Gly Pro Leu Glu Ala | 260 | 265 | 270 |
| Gln Asp Ser Leu Tyr Asn Ser Pro Leu Thr Glu Ser Cys Leu Ser | 275 | 280 | 285 |
| Pro Ala Glu Glu Glu Pro Ala Pro Cys Lys Asp Cys Gln Pro Leu | 290 | 295 | 300 |
| Cys Pro Pro Leu Thr Gly Ser Trp Glu Arg Gln Arg Gln Ala Ser | 305 | 310 | 315 |
| Asp Leu Ala Ser Ser Gly Val Val Ser Leu Asp Glu Asp Glu Ala | 320 | 325 | 330 |
| Glu Pro Glu Glu Gln | 335 | | |

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<211> 25

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

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<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 36
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<210> 37
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 37
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<210> 38
<211> 39
<212> DNA
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<220>
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<400> 38
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<210> 39
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 39
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<210> 40
<211> 2084

<212> DNA

<213> Homo sapiens

<400> 40

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<210> 41
<211> 334
<212> PRT
<213> Homo sapiens

<400> 41
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35 40 45
Pro Ile Ser Leu Glu Ser Glu Ala Asn Leu Asn Ser Asp Lys Glu
50 55 60
Asn Ile Thr Thr Ser Asn Leu Lys Ala Ser His Ser Pro Pro Leu
65 70 75
Asn Leu Pro Asn Asn Ser His Gly Ile Thr Asp Phe Ser Ser Asn
80 85 90
Ser Ser Ala Glu His Ser Leu Gly Ser Leu Lys Pro Thr Ser Thr
95 100 105

| | | |
|-----------------|---------------------|-------------------------|
| Ile Ser Thr Ser | Pro Pro Leu Ile His | Ser Phe Val Ser Lys Val |
| 110 | 115 | 120 |
| Pro Trp Asn Ala | Pro Ile Ala Asp Glu | Asp Leu Leu Pro Ile Ser |
| 125 | 130 | 135 |
| Ala His Pro Asn | Ala Thr Pro Ala Leu | Ser Ser Glu Asn Phe Thr |
| 140 | 145 | 150 |
| Trp Ser Leu Val | Asn Asp Thr Val Lys | Thr Pro Asp Asn Ser Ser |
| 155 | 160 | 165 |
| Ile Thr Val Ser | Ile Leu Ser Ser Glu | Pro Thr Ser Pro Ser Val |
| 170 | 175 | 180 |
| Thr Pro Leu Ile | Val Glu Pro Ser Gly | Trp Leu Thr Thr Asn Ser |
| 185 | 190 | 195 |
| Asp Ser Phe Thr | Gly Phe Thr Pro Tyr | Gln Glu Lys Thr Thr Leu |
| 200 | 205 | 210 |
| Gln Pro Thr Leu | Lys Phe Thr Asn Asn | Ser Lys Leu Phe Pro Asn |
| 215 | 220 | 225 |
| Thr Ser Asp Pro | Gln Lys Glu Asn Arg | Asn Thr Gly Ile Val Phe |
| 230 | 235 | 240 |
| Gly Ala Ile Leu | Gly Ala Ile Leu Gly | Val Ser Leu Leu Thr Leu |
| 245 | 250 | 255 |
| Val Gly Tyr Leu | Leu Cys Gly Lys Arg | Lys Thr Asp Ser Phe Ser |
| 260 | 265 | 270 |
| His Arg Arg Leu | Tyr Asp Asp Arg Asn | Glu Pro Val Leu Arg Leu |
| 275 | 280 | 285 |
| Asp Asn Ala Pro | Glu Pro Tyr Asp Val | Ser Phe Gly Asn Ser Ser |
| 290 | 295 | 300 |
| Tyr Tyr Asn Pro | Thr Leu Asn Asp Ser | Ala Met Pro Glu Ser Glu |
| 305 | 310 | 315 |
| Glu Asn Ala Arg | Asp Gly Ile Pro Met | Asp Asp Ile Pro Pro Leu |
| 320 | 325 | 330 |

Arg Thr Ser Val

<210> 42
 <211> 1594
 <212> DNA
 <213> Homo sapiens

<400> 42
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ccctataata aattttactc tatacaaaaa aaaaaaaaaa aaaa 1594

<210> 43

<211> 263

<212> PRT

<213> Homo sapiens

<400> 43

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Lys | Ile | Ala | Phe | Asn | Thr | Pro | Thr | Ala | Val | Gln | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Arg | Gln | Asp | Val | Glu | Ala | Leu | Leu | Ser | Arg | Thr | Val | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Ile | Leu | Thr | Gly | Lys | Glu | Leu | Arg | Val | Ala | Thr | Gln | Glu |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Gly | Ser | Ser | Gly | Arg | Cys | Met | Leu | Thr | Leu | Leu | Gly | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Phe | Ile | Leu | Ala | Gly | Leu | Ile | Val | Gly | Gly | Ala | Cys | Ile | Tyr |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Tyr | Phe | Met | Pro | Lys | Ser | Thr | Ile | Tyr | Arg | Gly | Glu | Met | Cys |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Phe | Asp | Ser | Glu | Asp | Pro | Ala | Asn | Ser | Leu | Arg | Gly | Gly | Glu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asn | Phe | Leu | Pro | Val | Thr | Glu | Glu | Ala | Asp | Ile | Arg | Glu | Asp |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asn | Ile | Ala | Ile | Ile | Asp | Val | Pro | Val | Pro | Ser | Phe | Ser | Asp |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Pro | Ala | Ala | Ile | Ile | His | Asp | Phe | Glu | Lys | Gly | Met | Thr |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Tyr | Leu | Asp | Leu | Leu | Leu | Gly | Asn | Cys | Tyr | Leu | Met | Pro | Leu |
| | | | 155 | | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Thr | Ser | Ile | Val | Met | Pro | Pro | Lys | Asn | Leu | Val | Glu | Leu | Phe |
| | | | 170 | | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Leu | Ala | Ser | Gly | Arg | Tyr | Leu | Pro | Gln | Thr | Tyr | Val | Val |
| | | | 185 | | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Asp | Leu | Val | Ala | Val | Glu | Glu | Ile | Arg | Asp | Val | Ser | Asn |
| | | | 200 | | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Ile | Phe | Ile | Tyr | Gln | Leu | Cys | Asn | Asn | Arg | Lys | Ser | Phe |
| | | | 215 | | | | | | 220 | | | | | 225 |

Arg Leu Arg Arg Arg Asp Leu Leu Leu Gly Phe Asn Lys Arg Ala

| | | | |
|---|-----|-----|-----|
| | 230 | 235 | 240 |
| Ile Asp Lys Cys Trp Lys Ile Arg His Phe Pro Asn Glu Phe Ile | | | |
| | 245 | 250 | 255 |
| Val Glu Thr Lys Ile Cys Gln Glu | | | |
| | 260 | | |

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 45
 <211> 20
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 45
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<210> 46
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<220>
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<210> 47
 <211> 28
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<220>
 <223> Synthetic oligonucleotide probe

<400> 47
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<210> 48
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<220>

<223> Synthetic oligonucleotide probe

<400> 48

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<210> 49

<211> 1969

<212> DNA

<213> Homo sapiens

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gtttcggcgg cagccccag cctctcatc cttctgttgc tgctgtggg 200
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agaagtacgt ggaccagagt gaccgggccg ggggccccg ggccttcagt 600
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Gly Ser Ser Ala Ser Ser Pro Ser Leu Pro Pro Pro Trp Thr Pro
 50 55 60
 Ala Leu Ser Pro Thr Ser Met Gly Pro Gln Pro Thr Thr Leu Gly
 65 70 75
 Gly Pro Ser Pro Pro Thr Asn Phe Leu Asp Gly Ile Val Asp Phe

| | 80 | 85 | 90 |
|-----------------|---------------------|-------------------------|-----|
| Phe Arg Gln Tyr | Val Met Leu Ile Ala | Val Val Gly Ser Leu Ala | |
| | 95 | 100 | 105 |
| Phe Leu Leu Met | Phe Ile Val Cys Ala | Ala Val Ile Thr Arg Gln | |
| | 110 | 115 | 120 |
| Lys Gln Lys Ala | Ser Ala Tyr Tyr Pro | Ser Ser Phe Pro Lys Lys | |
| | 125 | 130 | 135 |
| Lys Tyr Val Asp | Gln Ser Asp Arg Ala | Gly Gly Pro Arg Ala Phe | |
| | 140 | 145 | 150 |
| Ser Glu Val Pro | Asp Arg Ala Pro Asp | Ser Arg Pro Glu Glu Ala | |
| | 155 | 160 | 165 |
| Leu Asp Ser Ser | Arg Gln Leu Gln Ala | Asp Ile Leu Ala Ala Thr | |
| | 170 | 175 | 180 |
| Gln Asn Leu Lys | Ser Pro Thr Arg Ala | Ala Leu Gly Gly Gly Asp | |
| | 185 | 190 | 195 |
| Gly Ala Arg Met | Val Glu Gly Arg Gly | Ala Glu Glu Glu Glu Lys | |
| | 200 | 205 | 210 |
| Gly Ser Gln Glu | Gly Asp Gln Glu Val | Gln Gly His Gly Val Pro | |
| | 215 | 220 | 225 |
| Val Glu Thr Pro | Glu Ala Gln Glu Glu | Pro Cys Ser Gly Val Leu | |
| | 230 | 235 | 240 |
| Glu Gly Ala Val | Val Ala Gly Glu Gly | Gln Gly Glu Leu Glu Gly | |
| | 245 | 250 | 255 |
| Ser Leu Leu Leu | Ala Gln Glu Ala Gln | Gly Pro Val Gly Pro Pro | |
| | 260 | 265 | 270 |
| Glu Ser Pro Cys | Ala Cys Ser Ser Val | His Pro Ser Val | |
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<211> 1734

<212> DNA

<213> Homo sapiens

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agacactctg gagagagagg gggctgggca gagatgaagt tccaggggcc 200

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<210> 52

<211> 440

<212> PRT

<213> Homo sapiens

<400> 52

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Phe | Gln | Gly | Pro | Leu | Ala | Cys | Leu | Leu | Leu | Ala | Leu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Ser | Gly | Glu | Ala | Gly | Pro | Leu | Gln | Ser | Gly | Glu | Glu | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Thr | Asn | Ile | Gly | Glu | Ala | Leu | Gly | His | Gly | Leu | Gly | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Ser | Glu | Gly | Val | Gly | Lys | Ala | Ile | Gly | Lys | Glu | Ala | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Ala | Gly | Ser | Lys | Val | Ser | Glu | Ala | Leu | Gly | Gln | Gly | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Ala | Val | Gly | Thr | Gly | Val | Arg | Gln | Val | Pro | Gly | Phe | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Asp | Ala | Leu | Gly | Asn | Arg | Val | Gly | Glu | Ala | Ala | His | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Asn | Thr | Gly | His | Glu | Ile | Gly | Arg | Gln | Ala | Glu | Asp | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Arg | His | Gly | Ala | Asp | Ala | Val | Arg | Gly | Ser | Trp | Gln | Gly | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gly | His | Ser | Gly | Ala | Trp | Glu | Thr | Ser | Gly | Gly | His | Gly | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Ser | Gln | Gly | Gly | Leu | Gly | Gly | Gln | Gly | Gln | Gly | Asn | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Leu | Gly | Thr | Pro | Trp | Val | His | Gly | Tyr | Pro | Gly | Asn | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Ser | Phe | Gly | Met | Asn | Pro | Gln | Gly | Ala | Pro | Trp | Gly | Gln |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Asn | Gly | Gly | Pro | Pro | Asn | Phe | Gly | Thr | Asn | Thr | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ala | Gln | Pro | Gly | Tyr | Gly | Ser | Val | Arg | Ala | Ser | Asn | Gln |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Glu | Gly | Cys | Thr | Asn | Pro | Pro | Pro | Ser | Gly | Ser | Gly | Gly | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Asn | Ser | Gly | Gly | Gly | Ser | Gly | Ser | Gln | Ser | Gly | Ser | Ser | 245 | 250 | 255 |
| Gly | Ser | Gly | Ser | Asn | Gly | Asp | Asn | Asn | Asn | Gly | Ser | Ser | Ser | Gly | 260 | 265 | 270 |
| Gly | Ser | Ser | Ser | Gly | Ser | Ser | Ser | Gly | Ser | Ser | Ser | Gly | Gly | Ser | 275 | 280 | 285 |
| Ser | Gly | Gly | Ser | Ser | Gly | Gly | Ser | Ser | Gly | Asn | Ser | Gly | Gly | Ser | 290 | 295 | 300 |
| Arg | Gly | Asp | Ser | Gly | Ser | Glu | Ser | Ser | Trp | Gly | Ser | Ser | Thr | Gly | 305 | 310 | 315 |
| Ser | Ser | Ser | Gly | Asn | His | Gly | Gly | Ser | Gly | Gly | Gly | Asn | Gly | His | 320 | 325 | 330 |
| Lys | Pro | Gly | Cys | Glu | Lys | Pro | Gly | Asn | Glu | Ala | Arg | Gly | Ser | Gly | 335 | 340 | 345 |
| Glu | Ser | Gly | Ile | Gln | Gly | Phe | Arg | Gly | Gln | Gly | Val | Ser | Ser | Asn | 350 | 355 | 360 |
| Met | Arg | Glu | Ile | Ser | Lys | Glu | Gly | Asn | Arg | Leu | Leu | Gly | Gly | Ser | 365 | 370 | 375 |
| Gly | Asp | Asn | Tyr | Arg | Gly | Gln | Gly | Ser | Ser | Trp | Gly | Ser | Gly | Gly | 380 | 385 | 390 |
| Gly | Asp | Ala | Val | Gly | Gly | Val | Asn | Thr | Val | Asn | Ser | Glu | Thr | Ser | 395 | 400 | 405 |
| Pro | Gly | Met | Phe | Asn | Phe | Asp | Thr | Phe | Trp | Lys | Asn | Phe | Lys | Ser | 410 | 415 | 420 |
| Lys | Leu | Gly | Phe | Ile | Asn | Trp | Asp | Ala | Ile | Asn | Lys | Asp | Gln | Arg | 425 | 430 | 435 |
| Ser | Ser | Arg | Ile | Pro | | | | | | | | | | | 440 | | |

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<212> DNA

<213> Homo sapiens

<400> 53

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<213> Homo sapiens

<400> 54

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| Leu | Phe | Gln | Ile | Pro | Thr | Val | Pro | Glu | Asp | Leu | Phe | Phe | Leu | Glu |
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| Glu | Gly | Pro | Ser | Tyr | Ala | Phe | Glu | Val | Asp | Thr | Val | Ala | Pro | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Gly | Leu | Asp | Asn | Ala | Pro | Val | Val | Asp | Gln | Gln | Leu | Leu | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Cys | Cys | Pro | Tyr | Ile | Gly | Glu | Leu | Arg | Lys | Leu | Leu | Ala | Ser |
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| Trp | Val | Ser | Gly | Ser | Ser | Gly | Arg | Ser | Gly | Gly | Phe | Met | Arg | Lys |
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| Ile | Thr | Pro | Thr | Thr | Thr | Thr | Ser | Leu | Gly | Ala | Gln | Pro | Ser | Gln |
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| Thr | Ser | Gln | Gly | Leu | Gln | Ala | Gln | Leu | Ala | Gln | Ala | Phe | Phe | His |
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| Asn | Gln | Pro | Pro | Ser | Leu | Arg | Arg | Thr | Val | Glu | Phe | Val | Ala | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Ile | Gly | Ser | Asn | Cys | Val | Lys | His | Ile | Lys | Ala | Thr | Leu | Val |
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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Leu | Val | Arg | Gln | Ala | Glu | Ser | Leu | Leu | Gln | Glu | Gln | Leu | 155 | 160 | 165 |
| Val | Thr | Gln | Gly | Glu | Glu | Gly | Gly | Asp | Pro | Ala | Gln | Leu | Leu | Glu | 170 | 175 | 180 |
| Ile | Leu | Cys | Ser | Gln | Leu | Cys | Pro | His | Gly | Ala | Gln | Ala | Leu | Ala | 185 | 190 | 195 |
| Leu | Gly | Arg | Glu | Phe | Cys | Gln | Arg | Lys | Ser | Pro | Gly | Ala | Val | Arg | 200 | 205 | 210 |
| Ala | Leu | Leu | Pro | Glu | Glu | Thr | Pro | Ala | Ala | Val | Leu | Ser | Ser | Ala | 215 | 220 | 225 |
| Glu | Asn | Ile | Ala | Val | Gly | Leu | Ala | Thr | Glu | Lys | Ala | Cys | Ala | Trp | 230 | 235 | 240 |
| Leu | Ser | Ala | Asn | Ile | Thr | Ala | Leu | Ile | Arg | Arg | Glu | Val | Lys | Ala | 245 | 250 | 255 |
| Ala | Val | Ser | Arg | Thr | Leu | Arg | Ala | Gln | Gly | Pro | Glu | Pro | Ala | Ala | 260 | 265 | 270 |
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<213> Homo sapiens

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<213> Homo sapiens

<400> 56

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| Met | Ser | Ser | Asn | Lys | Glu | Gln | Arg | Ser | Ala | Val | Phe | Val | Ile | Leu | 1 | 5 | 10 | 15 |
| Phe | Ala | Leu | Ile | Thr | Ile | Leu | Ile | Leu | Tyr | Ser | Ser | Asn | Ser | Ala | 20 | 25 | 30 | |
| Asn | Glu | Val | Phe | His | Tyr | Gly | Ser | Leu | Arg | Gly | Arg | Ser | Arg | Arg | 35 | 40 | 45 | |
| Pro | Val | Asn | Leu | Lys | Lys | Trp | Ser | Ile | Thr | Asp | Gly | Tyr | Val | Pro | 50 | 55 | 60 | |
| Ile | Leu | Gly | Asn | Lys | Thr | Leu | Pro | Ser | Arg | Cys | His | Gln | Cys | Val | 65 | 70 | 75 | |
| Ile | Val | Ser | Ser | Ser | Ser | His | Leu | Leu | Gly | Thr | Lys | Leu | Gly | Pro | 80 | 85 | 90 | |
| Glu | Ile | Glu | Arg | Ala | Glu | Cys | Thr | Ile | Arg | Met | Asn | Asp | Ala | Pro | 95 | 100 | 105 | |
| Thr | Thr | Gly | Tyr | Ser | Ala | Asp | Val | Gly | Asn | Lys | Thr | Thr | Tyr | Arg | 110 | 115 | 120 | |
| Val | Val | Ala | His | Ser | Ser | Val | Phe | Arg | Val | Leu | Arg | Arg | Pro | Gln | 125 | 130 | 135 | |
| Glu | Phe | Val | Asn | Arg | Thr | Pro | Glu | Thr | Val | Phe | Ile | Phe | Trp | Gly | 140 | 145 | 150 | |
| Pro | Pro | Ser | Lys | Met | Gln | Lys | Pro | Gln | Gly | Ser | Leu | Val | Arg | Val | 155 | 160 | 165 | |
| Ile | Gln | Arg | Ala | Gly | Leu | Val | Phe | Pro | Asn | Met | Glu | Ala | Tyr | Ala | | | | |

| 170 | 175 | 180 |
|-------------------------------------|-------------------------|-----|
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| 185 | 190 | 195 |
| Glu Thr Gly Lys Asp Arg Glu Lys Ser | His Ser Trp Leu Ser Thr | |
| 200 | 205 | 210 |
| Gly Trp Phe Thr Met Val Ile Ala Val | Glu Leu Cys Asp His Val | |
| 215 | 220 | 225 |
| His Val Tyr Gly Met Val Pro Pro Asn | Tyr Cys Ser Gln Arg Pro | |
| 230 | 235 | 240 |
| Arg Leu Gln Arg Met Pro Tyr His Tyr | Tyr Glu Pro Lys Gly Pro | |
| 245 | 250 | 255 |
| Asp Glu Cys Val Thr Tyr Ile Gln Asn | Glu His Ser Arg Lys Gly | |
| 260 | 265 | 270 |
| Asn His His Arg Phe Ile Thr Glu Lys | Arg Val Phe Ser Ser Trp | |
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| Ala Gln Leu Tyr Gly Ile Thr Phe Ser | His Pro Ser Trp Thr | |
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<400> 58

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| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Val | Thr | Leu | Ala | Cys | Leu | Leu | Leu | Ala | Thr | Ala | Gly | Cys | Phe | Ala |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Asp | Leu | Asn | Glu | Val | Pro | Gln | Val | Thr | Val | Gln | Pro | Ala | Ser | Thr |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Val | Gln | Lys | Pro | Gly | Gly | Thr | Val | Ile | Leu | Gly | Cys | Val | Val | Glu |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Pro | Pro | Arg | Met | Asn | Val | Thr | Trp | Arg | Leu | Asn | Gly | Lys | Glu | Leu |
| | | | | 65 | | | | | 70 | | | | 75 | |
| Asn | Gly | Ser | Asp | Asp | Ala | Leu | Gly | Val | Leu | Ile | Thr | His | Gly | Thr |
| | | | | 80 | | | | | 85 | | | | 90 | |

| | | | |
|-----------------|-----|-----------------|-------------------------|
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| | 95 | | 100 105 |
| Cys Val Ala Arg | Met | Pro Ala Gly Ala | Val Ala Ser Val Pro Ala |
| | 110 | | 115 120 |
| Thr Val Thr Leu | Ala | Asn Leu Gln Asp | Phe Lys Leu Asp Val Gln |
| | 125 | | 130 135 |
| His Val Ile Glu | Val | Asp Glu Gly Asn | Thr Ala Val Ile Ala Cys |
| | 140 | | 145 150 |
| His Leu Pro Glu | Ser | His Pro Lys Ala | Gln Val Arg Tyr Ser Val |
| | 155 | | 160 165 |
| Lys Gln Glu Trp | Leu | Glu Ala Ser Arg | Gly Asn Tyr Leu Ile Met |
| | 170 | | 175 180 |
| Pro Ser Gly Asn | Leu | Gln Ile Val Asn | Ala Ser Gln Glu Asp Glu |
| | 185 | | 190 195 |
| Gly Met Tyr Lys | Cys | Ala Ala Tyr Asn | Pro Val Thr Gln Glu Val |
| | 200 | | 205 210 |
| Lys Thr Ser Gly | Ser | Ser Asp Arg Leu | Arg Val Arg Arg Ser Thr |
| | 215 | | 220 225 |
| Ala Glu Ala Ala | Arg | Ile Ile Tyr Pro | Pro Glu Ala Gln Thr Ile |
| | 230 | | 235 240 |
| Ile Val Thr Lys | Gly | Gln Ser Leu Ile | Leu Glu Cys Val Ala Ser |
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| Gly Ile Pro Pro | Pro | Arg Val Thr Trp | Ala Lys Asp Gly Ser Ser |
| | 260 | | 265 270 |
| Val Thr Gly Tyr | Asn | Lys Thr Arg Phe | Leu Leu Ser Asn Leu Leu |
| | 275 | | 280 285 |
| Ile Asp Thr Thr | Ser | Glu Glu Asp Ser | Gly Thr Tyr Arg Cys Met |
| | 290 | | 295 300 |
| Ala Asp Asn Gly | Val | Gly Gln Pro Gly | Ala Ala Val Ile Leu Tyr |
| | 305 | | 310 315 |
| Asn Val Gln Val | Phe | Glu Pro Pro Glu | Val Thr Met Glu Leu Ser |
| | 320 | | 325 330 |
| Gln Leu Val Ile | Pro | Trp Gly Gln Ser | Ala Lys Leu Thr Cys Glu |
| | 335 | | 340 345 |
| Val Arg Gly Asn | Pro | Pro Pro Ser Val | Leu Trp Leu Arg Asn Ala |
| | 350 | | 355 360 |
| Val Pro Leu Ile | Ser | Ser Gln Arg Leu | Arg Leu Ser Arg Arg Ala |
| | 365 | | 370 375 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Val | Leu | Ser | Met | Gly | Pro | Glu | Asp | Glu | Gly | Val | Tyr | Gln | 380 | 385 | 390 |
| Cys | Met | Ala | Glu | Asn | Glu | Val | Gly | Ser | Ala | His | Ala | Val | Val | Gln | 395 | 400 | 405 |
| Leu | Arg | Thr | Ser | Arg | Pro | Ser | Ile | Thr | Pro | Arg | Leu | Trp | Gln | Asp | 410 | 415 | 420 |
| Ala | Glu | Leu | Ala | Thr | Gly | Thr | Pro | Pro | Val | Ser | Pro | Ser | Lys | Leu | 425 | 430 | 435 |
| Gly | Asn | Pro | Glu | Gln | Met | Leu | Arg | Gly | Gln | Pro | Ala | Leu | Pro | Arg | 440 | 445 | 450 |
| Pro | Pro | Thr | Ser | Val | Gly | Pro | Ala | Ser | Pro | Lys | Cys | Pro | Gly | Glu | 455 | 460 | 465 |
| Lys | Gly | Gln | Gly | Ala | Pro | Ala | Glu | Ala | Pro | Ile | Ile | Leu | Ser | Ser | 470 | 475 | 480 |
| Pro | Arg | Thr | Ser | Lys | Thr | Asp | Ser | Tyr | Glu | Leu | Val | Trp | Arg | Pro | 485 | 490 | 495 |
| Arg | His | Glu | Gly | Ser | Gly | Arg | Ala | Pro | Ile | Leu | Tyr | Tyr | Val | Val | 500 | 505 | 510 |
| Lys | His | Arg | Lys | Gln | Val | Thr | Asn | Ser | Ser | Asp | Asp | Trp | Thr | Ile | 515 | 520 | 525 |
| Ser | Gly | Ile | Pro | Ala | Asn | Gln | His | Arg | Leu | Thr | Leu | Thr | Arg | Leu | 530 | 535 | 540 |
| Asp | Pro | Gly | Ser | Leu | Tyr | Glu | Val | Glu | Met | Ala | Ala | Tyr | Asn | Cys | 545 | 550 | 555 |
| Ala | Gly | Glu | Gly | Gln | Thr | Ala | Met | Val | Thr | Phe | Arg | Thr | Gly | Arg | 560 | 565 | 570 |
| Arg | Pro | Lys | Pro | Glu | Ile | Met | Ala | Ser | Lys | Glu | Gln | Gln | Ile | Gln | 575 | 580 | 585 |
| Arg | Asp | Asp | Pro | Gly | Ala | Ser | Pro | Gln | Ser | Ser | Ser | Gln | Pro | Asp | 590 | 595 | 600 |
| His | Gly | Arg | Leu | Ser | Pro | Pro | Glu | Ala | Pro | Asp | Arg | Pro | Thr | Ile | 605 | 610 | 615 |
| Ser | Thr | Ala | Ser | Glu | Thr | Ser | Val | Tyr | Val | Thr | Trp | Ile | Pro | Arg | 620 | 625 | 630 |
| Gly | Asn | Gly | Gly | Phe | Pro | Ile | Gln | Ser | Phe | Arg | Val | Glu | Tyr | Lys | 635 | 640 | 645 |
| Lys | Leu | Lys | Lys | Val | Gly | Asp | Trp | Ile | Leu | Ala | Thr | Ser | Ala | Ile | 650 | 655 | 660 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Pro | Pro | Ser | Arg | Leu | Ser | Val | Glu | Ile | Thr | Gly | Leu | Glu | Lys | Gly | | 665 | 670 | 675 |
| Thr | Ser | Tyr | Lys | Phe | Arg | Val | Arg | Ala | Leu | Asn | Met | Leu | Gly | Glu | | 680 | 685 | 690 |
| Ser | Glu | Pro | Ser | Ala | Pro | Ser | Arg | Pro | Tyr | Val | Val | Ser | Gly | Tyr | | 695 | 700 | 705 |
| Ser | Gly | Arg | Val | Tyr | Glu | Arg | Pro | Val | Ala | Gly | Pro | Tyr | Ile | Thr | | 710 | 715 | 720 |
| Phe | Thr | Asp | Ala | Val | Asn | Glu | Thr | Thr | Ile | Met | Leu | Lys | Trp | Met | | 725 | 730 | 735 |
| Tyr | Ile | Pro | Ala | Ser | Asn | Asn | Asn | Thr | Pro | Ile | His | Gly | Phe | Tyr | | 740 | 745 | 750 |
| Ile | Tyr | Tyr | Arg | Pro | Thr | Asp | Ser | Asp | Asn | Asp | Ser | Asp | Tyr | Lys | | 755 | 760 | 765 |
| Lys | Asp | Met | Val | Glu | Gly | Asp | Lys | Tyr | Trp | His | Ser | Ile | Ser | His | | 770 | 775 | 780 |
| Leu | Gln | Pro | Glu | Thr | Ser | Tyr | Asp | Ile | Lys | Met | Gln | Cys | Phe | Asn | | 785 | 790 | 795 |
| Glu | Gly | Gly | Glu | Ser | Glu | Phe | Ser | Asn | Val | Met | Ile | Cys | Glu | Thr | | 800 | 805 | 810 |
| Lys | Ala | Arg | Lys | Ser | Ser | Gly | Gln | Pro | Gly | Arg | Leu | Pro | Pro | Pro | | 815 | 820 | 825 |
| Thr | Leu | Ala | Pro | Pro | Gln | Pro | Pro | Leu | Pro | Glu | Thr | Ile | Glu | Arg | | 830 | 835 | 840 |
| Pro | Val | Gly | Thr | Gly | Ala | Met | Val | Ala | Arg | Ser | Ser | Asp | Leu | Pro | | 845 | 850 | 855 |
| Tyr | Leu | Ile | Val | Gly | Val | Val | Leu | Gly | Ser | Ile | Val | Leu | Ile | Ile | | 860 | 865 | 870 |
| Val | Thr | Phe | Ile | Pro | Phe | Cys | Leu | Trp | Arg | Ala | Trp | Ser | Lys | Gln | | 875 | 880 | 885 |
| Lys | His | Thr | Thr | Asp | Leu | Gly | Phe | Pro | Arg | Ser | Ala | Leu | Pro | Pro | | 890 | 895 | 900 |
| Ser | Cys | Pro | Tyr | Thr | Met | Val | Pro | Leu | Gly | Gly | Leu | Pro | Gly | His | | 905 | 910 | 915 |
| Gln | Ala | Ser | Gly | Gln | Pro | Tyr | Leu | Ser | Gly | Ile | Ser | Gly | Arg | Ala | | 920 | 925 | 930 |
| Cys | Ala | Asn | Gly | Ile | His | Met | Asn | Arg | Gly | Cys | Pro | Ser | Ala | Ala | | 935 | 940 | 945 |

| | | | |
|---|------|------|------|
| Val Gly Tyr Pro Gly Met Lys Pro Gln Gln His Cys Pro Gly Glu | 950 | 955 | 960 |
| Leu Gln Gln Gln Ser Asp Thr Ser Ser Leu Leu Arg Gln Thr His | 965 | 970 | 975 |
| Leu Gly Asn Gly Tyr Asp Pro Gln Ser His Gln Ile Thr Arg Gly | 980 | 985 | 990 |
| Pro Lys Ser Ser Pro Asp Glu Gly Ser Phe Leu Tyr Thr Leu Pro | 995 | 1000 | 1005 |
| Asp Asp Ser Thr His Gln Leu Leu Gln Pro His His Asp Cys Cys | 1010 | 1015 | 1020 |
| Gln Arg Gln Glu Gln Pro Ala Ala Val Gly Gln Ser Gly Val Arg | 1025 | 1030 | 1035 |
| Arg Ala Pro Asp Ser Pro Val Leu Glu Ala Val Trp Asp Pro Pro | 1040 | 1045 | 1050 |
| Phe His Ser Gly Pro Pro Cys Cys Leu Gly Leu Val Pro Val Glu | 1055 | 1060 | 1065 |
| Glu Val Asp Ser Pro Asp Ser Cys Gln Val Ser Gly Gly Asp Trp | 1070 | 1075 | 1080 |
| Cys Pro Gln His Pro Val Gly Ala Tyr Val Gly Gln Glu Pro Gly | 1085 | 1090 | 1095 |
| Met Gln Leu Ser Pro Gly Pro Leu Val Arg Val Ser Phe Glu Thr | 1100 | 1105 | 1110 |
| Pro Pro Leu Thr Ile | 1115 | | |

<210> 59

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 59

gggaaacaca gcagtcattg cctgc 25

<210> 60

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 60

gcacacgtag cctgtcgctg gagc 24

<210> 61
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 61
caccctcaaag cccaggtccg gtacagcgtc aaacaagagt gg 42

<210> 62
<211> 1661
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 678
<223> unknown base

<400> 62
cgggaggtcg ggtcgatcat atccggaccc cattgtcggc ctctgcccat 50
cgctgctcc tcccaggctc ccgcgccga ccccgcgca acatgcagcc 100
cacgggcccgc gaggggtccc gcgcgctcag ccggcggtat ctgcggcgtc 150
tgctgctcct gctactgctg ctgctgctgc ggcagcccggt aacccgcgcg 200
gagaccacgc cgggcccccc cagagccctc tccacgctgg gctccccag 250
cctcttcacc acgcccgggtg tccccagcgc cctcactacc ccaggcctca 300
ctacgccagg ccccccaaa accctggacc ttcgggggtcg cgcgcaggcc 350
ctgatgcgga gtttcccact cgtggacggc cacaatgacc tgccccaggt 400
cctgagacag cgttacaaga atgtgcttca ggatgttaac ctgcgaaatt 450
tcagccatgg tcagaccagc ctggacaggc ttagagacgg cctcgtgggt 500
gcccagttct ggtcagcctc cgtctcatgc cagtcccagg accagactgc 550
cgtgcgcctc gccctggagc agattgacct cattcaccgc atgtgtgcct 600
cctactctga actcgagctt gtgacctcag ctgaaggctc gaacagctct 650
caaaagctgg cctgcctcat tggcgtgnag ggtggtcact cactggacag 700
cagcctctct gtgctgcgca gtttctatgt gctgggggtg cgctacctga 750
cacttacctt cacctgcagt acaccatggg cagagagttc caccaagttc 800
agacaccaca tgtacaccaa cgtcagcgga ttgacaagct ttggtgagaa 850

agtagtagag gagggtgaacc gcctgggcat gatgatagat ttgtcctatg 900
 catcggacac cttgataaga agggctcctgg aagtgtctca ggctcctgtg 950
 atcttctccc actcagctgc cagagctgtg tgtgacaatt tgttgaatgt 1000
 tcccgatgat atcctgcagc ttctgaagaa cgggtggcatc gtgatggtga 1050
 cactgtccat gggggtgctg cagtgcgaacc tgcttgctaa cgtgtccact 1100
 gtggcagatc actttgacca catcaggga gtcattggat ctgagttcat 1150
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 aggatgtgtc cacataccca gtccctgatag aggagttgct gagtcgtasc 1250
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 cttcagacaa gtggaaaagg tgagagagga gagcagggcg cagagccccg 1350
 tggaggctga gtttccatat gggcaactga gcacatcctg ccactccac 1400
 ctctgcctc agaatggaca ccaggctact catctggagg tgaccaagca 1450
 gccaaccaat cgggtcccct ggaggtcctc aaatgcctcc ccataccttg 1500
 ttccaggcct tgtggctgct gccaccatcc caaccttcac ccagtggctc 1550
 tgctgacaca gtcgggtcccc gcagaggtca ctgtggcaaa gcctcacaaa 1600
 gccccctctc ctagttcatt cacaagcata tgctgagaat aaacatgtta 1650
 cacatggaaa a 1661

<210> 63
 <211> 487
 <212> PRT
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 196, 386
 <223> unknown amino acid

<400> 63
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 1 5 10 15
 Tyr Leu Arg Arg Leu Leu Leu Leu Leu Leu Leu Leu Leu Arg
 20 25 30
 Gln Pro Val Thr Arg Ala Glu Thr Thr Pro Gly Ala Pro Arg Ala
 35 40 45
 Leu Ser Thr Leu Gly Ser Pro Ser Leu Phe Thr Thr Pro Gly Val
 50 55 60

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Pro | Ser | Ala | Leu | Thr | Thr | Pro | Gly | Leu | Thr | Thr | Pro | Gly | Thr | Pro | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | |
| Lys | Thr | Leu | Asp | Leu | Arg | Gly | Arg | Ala | Gln | Ala | Leu | Met | Arg | Ser | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | |
| Phe | Pro | Leu | Val | Asp | Gly | His | Asn | Asp | Leu | Pro | Gln | Val | Leu | Arg | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | |
| Gln | Arg | Tyr | Lys | Asn | Val | Leu | Gln | Asp | Val | Asn | Leu | Arg | Asn | Phe | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | |
| Ser | His | Gly | Gln | Thr | Ser | Leu | Asp | Arg | Leu | Arg | Asp | Gly | Leu | Val | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | |
| Gly | Ala | Gln | Phe | Trp | Ser | Ala | Ser | Val | Ser | Cys | Gln | Ser | Gln | Asp | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | |
| Gln | Thr | Ala | Val | Arg | Leu | Ala | Leu | Glu | Gln | Ile | Asp | Leu | Ile | His | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | |
| Arg | Met | Cys | Ala | Ser | Tyr | Ser | Glu | Leu | Glu | Leu | Val | Thr | Ser | Ala | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | |
| Glu | Gly | Leu | Asn | Ser | Ser | Gln | Lys | Leu | Ala | Cys | Leu | Ile | Gly | Val | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | |
| Xaa | Gly | Gly | His | Ser | Leu | Asp | Ser | Ser | Leu | Ser | Val | Leu | Arg | Ser | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | |
| Phe | Tyr | Val | Leu | Gly | Val | Arg | Tyr | Leu | Thr | Leu | Thr | Phe | Thr | Cys | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | |
| Ser | Thr | Pro | Trp | Ala | Glu | Ser | Ser | Thr | Lys | Phe | Arg | His | His | Met | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Tyr | Thr | Asn | Val | Ser | Gly | Leu | Thr | Ser | Phe | Gly | Glu | Lys | Val | Val | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Glu | Glu | Leu | Asn | Arg | Leu | Gly | Met | Met | Ile | Asp | Leu | Ser | Tyr | Ala | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| Ser | Asp | Thr | Leu | Ile | Arg | Arg | Val | Leu | Glu | Val | Ser | Gln | Ala | Pro | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | |
| Val | Ile | Phe | Ser | His | Ser | Ala | Ala | Arg | Ala | Val | Cys | Asp | Asn | Leu | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | |
| Leu | Asn | Val | Pro | Asp | Asp | Ile | Leu | Gln | Leu | Leu | Lys | Asn | Gly | Gly | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | |
| Ile | Val | Met | Val | Thr | Leu | Ser | Met | Gly | Val | Leu | Gln | Cys | Asn | Leu | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | |
| Leu | Ala | Asn | Val | Ser | Thr | Val | Ala | Asp | His | Phe | Asp | His | Ile | Arg | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | |

| | | |
|---|-----|-----|
| Ala Val Ile Gly Ser Glu Phe Ile Gly Ile Gly Gly Asn Tyr Asp | | |
| | 350 | 360 |
| Gly Thr Gly Arg Phe Pro Gln Gly Leu Glu Asp Val Ser Thr Tyr | | |
| | 365 | 375 |
| Pro Val Leu Ile Glu Glu Leu Leu Ser Arg Xaa Trp Ser Glu Glu | | |
| | 380 | 390 |
| Glu Leu Gln Gly Val Leu Arg Gly Asn Leu Leu Arg Val Phe Arg | | |
| | 395 | 405 |
| Gln Val Glu Lys Val Arg Glu Glu Ser Arg Ala Gln Ser Pro Val | | |
| | 410 | 420 |
| Glu Ala Glu Phe Pro Tyr Gly Gln Leu Ser Thr Ser Cys His Ser | | |
| | 425 | 435 |
| His Leu Val Pro Gln Asn Gly His Gln Ala Thr His Leu Glu Val | | |
| | 440 | 450 |
| Thr Lys Gln Pro Thr Asn Arg Val Pro Trp Arg Ser Ser Asn Ala | | |
| | 455 | 465 |
| Ser Pro Tyr Leu Val Pro Gly Leu Val Ala Ala Ala Thr Ile Pro | | |
| | 470 | 480 |
| Thr Phe Thr Gln Trp Leu Cys | | |
| | 485 | |

<210> 64
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 64
 ccttcacctg cagtacacca tgggc 25

 <210> 65
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 65
 gtcacacaca gctctggcag ctgag 25

 <210> 66
 <211> 47
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 66

ccaagttcag acaccacatg tacaccaacg tcagcggatt gacaagc 47

<210> 67

<211> 1564

<212> DNA

<213> Homo sapiens

<400> 67

tgctaggctc tgtcccacaa tgcacccgag agcaggagct gaaagcctct 50
aacacccaca gatccctcta tgactgcaat gtgaggtgtc cggctttgct 100
ggcccagcaa gcctgataag catgaagctc ttatctttgg tggctgtggt 150
cgggtgtttg ctggtgcccc cagctgaagc caacaagagt tctgaagata 200
tccggtgcaa atgcatctgt ccaccttata gaaacatcag tgggcacatt 250
tacaaccaga atgtatccca gaaggactgc aactgcctgc acgtggtgga 300
gcccattgcca gtgcctggcc atgacgtgga ggcctactgc ctgctgtgcg 350
agtgcaggta cgaggagcgc agcaccacca ccatcaaggt catcattgtc 400
atctacctgt ccgtggtggg tgccctgttg ctctacatgg ccttcctgat 450
gctggtggac cctctgatcc gaaagccgga tgcatacact gagcaactgc 500
acaatgagga ggagaatgag gatgctcgtc ctatggcagc agctgctgca 550
tccctcgggg gaccccgagc aaacacagtc ctggagcgtg tggaaggtgc 600
ccagcagcgg tggaagctgc aggtgcagga gcagcggaag acagtcttcg 650
atcggcacaa gatgctcagc tagatgggct ggtgtggttg ggtcaaggcc 700
ccaacaccat ggctgccagc ttccaggctg gacaaagcag ggggctactt 750
ctcccttccc tcggttccag tcttcccttt aaaagcctgt ggcatTTTTc 800
ctccttctcc ctaactttag aaatgttgta cttggctatt ttgattaggg 850
aagagggatg tggctctctga tctctgttgt cttcttgggt ctttggggtt 900
gaagggaggg ggaaggcagg ccagaaggga atggagacat tcgaggcggc 950
ctcaggagtg gatgcgatct gtctctctctg gctccactct tgccgccttc 1000
cagctctgag tcttggaat gttgttacct ttggaagata aagctgggtc 1050
ttcaggaact cagtgtctgg gaggaagca tggcccagca ttcagcatgt 1100
gttcccttct gcagtgttc ttatcaccac ctccctccca gccccggcgc 1150

ctcagcccca gcccagctc cagccctgag gacagctctg atgggagagc 1200
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 cgctgtcccc tgtgcacttc tcgcactggg gcatggagtg cccatgcata 1300
 ctctgctgcc ggtccctca cctgcacttg aggggtctgg gcagtccctc 1350
 ctctccccag tgtccacagt cactgagcca gacggtcggt tggaacatga 1400
 gactcgaggc tgagcgtgga tctgaacacc acagcccctg tacttggggtt 1450
 gcctcttgtc cctgaacttc gttgtaccag tgcattggaga gaaaattttg 1500
 tcctcttgtc ttagagttgt gtgtaaatca aggaagccat cattaaattg 1550
 ttttatttct ctca 1564

<210> 68
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 68
 Met Lys Leu Leu Ser Leu Val Ala Val Val Gly Cys Leu Leu Val
 1 5 10 15
 Pro Pro Ala Glu Ala Asn Lys Ser Ser Glu Asp Ile Arg Cys Lys
 20 25 30
 Cys Ile Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn
 35 40 45
 Gln Asn Val Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu
 50 55 60
 Pro Met Pro Val Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu
 65 70 75
 Cys Glu Cys Arg Tyr Glu Glu Arg Ser Thr Thr Thr Ile Lys Val
 80 85 90
 Ile Ile Val Ile Tyr Leu Ser Val Val Gly Ala Leu Leu Leu Tyr
 95 100 105
 Met Ala Phe Leu Met Leu Val Asp Pro Leu Ile Arg Lys Pro Asp
 110 115 120
 Ala Tyr Thr Glu Gln Leu His Asn Glu Glu Glu Asn Glu Asp Ala
 125 130 135
 Arg Ser Met Ala Ala Ala Ala Ala Ser Leu Gly Gly Pro Arg Ala
 140 145 150
 Asn Thr Val Leu Glu Arg Val Glu Gly Ala Gln Gln Arg Trp Lys
 155 160 165

Leu Gln Val Gln Glu Gln Arg Lys Thr Val Phe Asp Arg His Lys
170 175 180

Met Leu Ser

<210> 69

<211> 3170

<212> DNA

<213> Homo sapiens

<400> 69

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agttcatagg gtcctgggtc cccgaaccag gaagggttga gggaacacaa 100
tctgcaagcc cccgcgaccc aagtgagggg ccccggtgtg gggtcctccc 150
tccctttgca ttcccacccc tccgggcttt gcgtcttcct ggggaccccc 200
tcgccgggag atggccgcgt tgatgcggag caaggattcg tcctgctgcc 250
tgctectact ggccgcggtg ctgatggtgg agagctcaca gatcggcagt 300
tcgcggggcca aactcaactc catcaagtcc tctctgggcg gggagacgcc 350
tggtcaggcc gccaatcgat ctgcgggcat gtaccaagga ctggcattcg 400
gcggcagtaa gaagggcaaa aacctggggc aggcctaccc ttgtagcagt 450
gataaggagt gtgaagttgg gaggtattgc cacagtcccc accaaggatc 500
atcggcctgc atggtgtgtc ggagaaaaaa gaagcgtgc caccgagatg 550
gcatgtgctg cccagttacc cgctgcaata atggcatctg tatcccagtt 600
actgaaagca tcttaacccc tcacatcccc gctctggatg gtactcggca 650
cagagatcga aaccacggtc attactcaaa ccatgacttg ggatggcaga 700
atctaggaag accacacact aagatgtcac atataaaagg gcatgaagga 750
gacccctgcc tacgatcatc agactgcatt gaagggtttt gctgtgctcg 800
tcattttctg accaaaatct gcaaaccagt gctccatcag ggggaagtct 850
gtaccaaaca acgcaagaag ggttctcatg ggctggaaat tttccagcgt 900
tgcgactgtg cgaagggcct gtcttgcaaa gtatggaaag atgccaccta 950
ctcctccaaa gccagactcc atgtgtgtca gaaaatttga tcaccattga 1000
ggaacatcat caattgcaga ctgtgaagtt gtgtatttaa tgcattatag 1050
catggtggaa aataaggttc agatgcagaa gaatggctaa aataagaaac 1100

gtgataagaa tatagatgat cacaaaaagg gagaaagaaa acatgaactg 1150
aatagattag aatgggtgac aaatgcagtg cagccagtgt ttccattatg 1200
caacttgtct atgtaaataa tgtacacatt tgtggaaaat gctattatta 1250
agagaacaag cacacagtgg aaattactga tgagtagcat gtgactttcc 1300
aagagtttag gttgtgctgg aggagaggtt tccttcagat tgctgattgc 1350
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aaaatactcc tagaataact tgttatacaa taggttctaa aaataaaatt 1450
gctaaacaag aaatgaaaac atggagcatt gttaatttac aacagaaaat 1500
taccttttga tttgtaacac tacttctgct gttcaatcaa gagtcttggt 1550
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cagttgttta ggaaggcctt taggaagaca aataaataac aaacaaacag 1650
ccacaatac ttttttttca aaattttagt ttacctgta attaataaga 1700
actgatacaa gacaaaaaca gttccttcag attctacgga atgacagtat 1750
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aactataccc ataaattgtg actagtaaaa tacttacaca gagcagaatt 1850
ttcacagatg gcaaaaaaat ttaaagatgt ccaatatatg tgggaaaaga 1900
gctaacagag agatcattat ttcttaaaga ttggccataa cctatatattt 1950
gatagaatta gattggtaaa tacatgtatt catacact ctgtggtaat 2000
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tgaatatctg catgggattt gctatcataa tatttactat gcagatgaat 2200
tcagtgtgag gtcctgtgtc cgtactatcc tcaaattatt tattttatag 2250
tgctgagatc ctcaaataat ctcaatttca ggaggtttca caaaatgtac 2300
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accacagttt ctaaattctt tgaaaccact ttactacttt ttttaaactt 2550

aactcagttc taaatacttt gtctggagca caaaacaata aaaggttatac 2600
ttatagtcgt gactttaaac ttttgtagac cacaattcac tttttagttt 2650
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agattgagtt tgagcctgta tatctattaa aaatttcaac ttcccacata 2750
tatttactaa gatgattaag acttacattt tctgcacagg tctgcaaaaa 2800
caaaaattat aaactagtcc atccaagaac caaagtttgt ataaacaggt 2850
tgctataagc ttgtgaaatg aaaatggaac atttcaatca aacatttcct 2900
atataacaat tattatattt acaatttggg ttctgcaata tttttcttat 2950
gtccaccctt ttaaaaatta ttatttgaag taatttattt acaggaaatg 3000
ttaatgagat gtattttctt atagagatat ttcttacaga aagctttgta 3050
gcagaatata tttgcagcta ttgactttgt aatttaggaa aaatgtataa 3100
taagataaaa tctattaaat ttttctcctc taaaaactga aaaaaaaaaa 3150
aaaaaaaaaa aaaaaaaaaa 3170

<210> 70
<211> 259
<212> PRT
<213> Homo sapiens

<400> 70
Met Ala Ala Leu Met Arg Ser Lys Asp Ser Ser Cys Cys Leu Leu
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Leu Leu Ala Ala Val Leu Met Val Glu Ser Ser Gln Ile Gly Ser
20 25 30
Ser Arg Ala Lys Leu Asn Ser Ile Lys Ser Ser Leu Gly Gly Glu
35 40 45
Thr Pro Gly Gln Ala Ala Asn Arg Ser Ala Gly Met Tyr Gln Gly
50 55 60
Leu Ala Phe Gly Gly Ser Lys Lys Gly Lys Asn Leu Gly Gln Ala
65 70 75
Tyr Pro Cys Ser Ser Asp Lys Glu Cys Glu Val Gly Arg Tyr Cys
80 85 90
His Ser Pro His Gln Gly Ser Ser Ala Cys Met Val Cys Arg Arg
95 100 105
Lys Lys Lys Arg Cys His Arg Asp Gly Met Cys Cys Pro Ser Thr
110 115 120

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Asn | Asn | Gly | Ile | Cys | Ile | Pro | Val | Thr | Glu | Ser | Ile | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Pro | His | Ile | Pro | Ala | Leu | Asp | Gly | Thr | Arg | His | Arg | Asp | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asn | His | Gly | His | Tyr | Ser | Asn | His | Asp | Leu | Gly | Trp | Gln | Asn | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Arg | Pro | His | Thr | Lys | Met | Ser | His | Ile | Lys | Gly | His | Glu | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asp | Pro | Cys | Leu | Arg | Ser | Ser | Asp | Cys | Ile | Glu | Gly | Phe | Cys | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Arg | His | Phe | Trp | Thr | Lys | Ile | Cys | Lys | Pro | Val | Leu | His | Gln |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Glu | Val | Cys | Thr | Lys | Gln | Arg | Lys | Lys | Gly | Ser | His | Gly | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Glu | Ile | Phe | Gln | Arg | Cys | Asp | Cys | Ala | Lys | Gly | Leu | Ser | Cys | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Trp | Lys | Asp | Ala | Thr | Tyr | Ser | Ser | Lys | Ala | Arg | Leu | His | Val |
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Cys Gln Lys Ile

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 <211> 1809
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<210> 72
 <211> 363
 <212> PRT
 <213> Homo sapiens

<400> 72

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Cys | Phe | Lys | Ala | Leu | Gly | Arg | Asn | Ser | Val | Leu | Leu | Arg | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Ser | Phe | Ile | Pro | Leu | Leu | Lys | Ser | Ser | Val | Leu | Gly | Ser | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Gly | Glu | Leu | Ala | Pro | Pro | Lys | Met | Ala | Asn | Ile | Thr | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Ile | Leu | Asp | Gln | Leu | Lys | Ala | Pro | Ser | Leu | Gly | Gln | Phe | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Thr | Pro | Ser | Thr | Gln | Gln | Asn | Ser | Thr | Ser | His | Pro | Thr | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Thr | Ser | Trp | Asp | Leu | Lys | Pro | Pro | Thr | Ser | Gln | Ser | Ser | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Ser | His | Leu | Asp | Phe | Lys | Ser | Gln | Pro | Glu | Pro | Ser | Pro | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Ser | Gln | Leu | Ser | Gln | Arg | Gln | Gln | His | Gln | Ser | Gln | Ala | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Val | Pro | Pro | Pro | Gly | Leu | Glu | Ser | Phe | Pro | Ser | Gln | Ala | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Arg | Glu | Ser | Thr | Pro | Gly | Asp | Ser | Pro | Ser | Thr | Val | Asn | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Leu | Gln | Leu | Pro | Ser | Thr | Thr | Ile | Glu | Asn | Ile | Ser | Val | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | His | Gln | Pro | Gln | Pro | Lys | His | Ile | Lys | Leu | Ala | Lys | Arg | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ile | Pro | Pro | Ala | Ser | Lys | Ile | Pro | Ala | Ser | Ala | Val | Glu | Met | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Ser | Ala | Asp | Val | Thr | Gly | Leu | Asn | Val | Gln | Phe | Gly | Ala | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Phe | Gly | Ser | Glu | Pro | Ser | Leu | Ser | Glu | Phe | Gly | Ser | Ala | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Ser | Glu | Asn | Ser | Asn | Gln | Ile | Pro | Ile | Ser | Leu | Tyr | Ser | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Leu | Ser | Glu | Pro | Leu | Asn | Thr | Ser | Leu | Ser | Met | Thr | Ser | Ala |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Val | Gln | Asn | Ser | Thr | Tyr | Thr | Thr | Ser | Val | Ile | Thr | Ser | Cys | Ser |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Thr | Ser | Ser | Ser | Leu | Asn | Ser | Ala | Ser | Pro | Val | Ala | Met | Ser |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 275 | | 280 | | 285 |
| Ser Ser Tyr Asp | Gln Ser Ser Val His | Asn Arg Ile Pro Tyr | Gln | | |
| | 290 | | 295 | | 300 |
| Ser Pro Val Ser | Ser Ser Glu Ser Ala | Pro Gly Thr Ile Met | Asn | | |
| | 305 | | 310 | | 315 |
| Gly His Gly Gly | Gly Arg Ser Gln Gln | Thr Leu Asp Ser Lys | Tyr | | |
| | 320 | | 325 | | 330 |
| Ser Ser Lys Leu | Leu Leu Ser Trp Leu | Val Pro Thr Lys Gln | Arg | | |
| | 335 | | 340 | | 345 |
| Lys Arg Ile Ala | His Val Met Trp Lys | Thr Pro Val Gly Gln | Trp | | |
| | 350 | | 355 | | 360 |
| Leu Ile Arg | | | | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 74
 <211> 22
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 74
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<210> 75
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 75
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<210> 76
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 <212> DNA
 <213> Homo sapiens

<400> 76

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tgcactcagc ggtggaggag acggacgagg ggctgtacac ctgcaacctg 150
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<210> 77

<211> 341

<212> PRT

<213> Homo sapiens

<400> 77

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Leu | Pro | Ser | Arg | Ile | Leu | Leu | Trp | Lys | Leu | Val | Leu | Leu | 1 | 5 | 10 | 15 |
| Gln | Ser | Ser | Ala | Val | Leu | Leu | His | Ser | Ala | Val | Glu | Glu | Thr | Asp | 20 | 25 | 30 | |
| Ala | Gly | Leu | Tyr | Thr | Cys | Asn | Leu | His | His | His | Tyr | Cys | His | Leu | 35 | 40 | 45 | |
| Tyr | Glu | Ser | Leu | Ala | Val | Arg | Leu | Glu | Val | Thr | Asp | Gly | Pro | Pro | 50 | 55 | 60 | |
| Ala | Thr | Pro | Ala | Tyr | Trp | Asp | Gly | Glu | Lys | Glu | Val | Leu | Ala | Val | 65 | 70 | 75 | |
| Ala | Arg | Gly | Ala | Pro | Ala | Leu | Leu | Thr | Cys | Val | Asn | Arg | Gly | His | 80 | 85 | 90 | |
| Val | Trp | Thr | Asp | Arg | His | Val | Glu | Glu | Ala | Gln | Gln | Val | Val | His | 95 | 100 | 105 | |
| Trp | Asp | Arg | Gln | Pro | Pro | Gly | Val | Pro | His | Asp | Arg | Ala | Asp | Arg | 110 | 115 | 120 | |
| Leu | Leu | Asp | Leu | Tyr | Ala | Ser | Gly | Glu | Arg | Arg | Ala | Tyr | Gly | Pro | 125 | 130 | 135 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Phe | Leu | Arg | Asp | Arg | Val | Ala | Val | Gly | Ala | Asp | Ala | Phe | Glu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Gly | Asp | Phe | Ser | Leu | Arg | Ile | Glu | Pro | Leu | Glu | Val | Ala | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Gly | Thr | Tyr | Ser | Cys | His | Leu | His | His | His | Tyr | Cys | Gly | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| His | Glu | Arg | Arg | Val | Phe | His | Leu | Thr | Val | Ala | Glu | Pro | His | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Pro | Pro | Arg | Gly | Ser | Pro | Gly | Asn | Gly | Ser | Ser | His | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Ala | Pro | Gly | Pro | Asp | Pro | Thr | Leu | Ala | Arg | Gly | His | Asn | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Asn | Val | Ile | Val | Pro | Glu | Ser | Arg | Ala | His | Phe | Phe | Gln | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gly | Tyr | Val | Leu | Ala | Thr | Leu | Leu | Leu | Phe | Ile | Leu | Leu | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Thr | Val | Leu | Leu | Ala | Ala | Arg | Arg | Arg | Arg | Gly | Gly | Tyr | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Tyr | Ser | Asp | Gln | Lys | Ser | Gly | Lys | Ser | Lys | Gly | Lys | Asp | Val | Asn | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Leu | Ala | Glu | Phe | Ala | Val | Ala | Ala | Gly | Asp | Gln | Met | Leu | Tyr | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Glu | Asp | Ile | Gln | Leu | Asp | Tyr | Lys | Asn | Asn | Ile | Leu | Lys | Glu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Arg | Ala | Glu | Leu | Ala | His | Ser | Pro | Leu | Pro | Ala | Lys | Tyr | Ile | Asp | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Asp | Lys | Gly | Phe | Arg | Lys | Glu | Asn | Cys | Lys | | | | | |
| | | | | 335 | | | | | 340 | | | | | | |

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 <211> 2243
 <212> DNA
 <213> Homo sapiens

<400> 78
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 cgccccctgg cctgcagagg ccgaggacc gcttctgtgg cacatacatc 200

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<211> 475

<212> PRT

<213> Homo sapiens

<400> 79

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| Met | Ala | Val | Val | Ser | Glu | Asp | Asp | Phe | Gln | His | Ser | Ser | Asn | Ser | 1 | 5 | 10 | 15 |
| Thr | Tyr | Gly | Thr | Thr | Ser | Ser | Ser | Leu | Arg | Ala | Asp | Gln | Glu | Ala | 20 | 25 | 30 | |
| Leu | Leu | Glu | Lys | Leu | Leu | Asp | Arg | Pro | Pro | Pro | Gly | Leu | Gln | Arg | 35 | 40 | 45 | |
| Pro | Glu | Asp | Arg | Phe | Cys | Gly | Thr | Tyr | Ile | Ile | Phe | Phe | Ser | Leu | 50 | 55 | 60 | |
| Gly | Ile | Gly | Ser | Leu | Leu | Pro | Trp | Asn | Phe | Phe | Ile | Thr | Ala | Lys | 65 | 70 | 75 | |
| Glu | Tyr | Trp | Met | Phe | Lys | Leu | Arg | Asn | Ser | Ser | Ser | Pro | Ala | Thr | 80 | 85 | 90 | |
| Gly | Glu | Asp | Pro | Glu | Gly | Ser | Asp | Ile | Leu | Asn | Tyr | Phe | Glu | Ser | 95 | 100 | 105 | |
| Tyr | Leu | Ala | Val | Ala | Ser | Thr | Val | Pro | Ser | Met | Leu | Cys | Leu | Val | 110 | 115 | 120 | |
| Ala | Asn | Phe | Leu | Leu | Val | Asn | Arg | Val | Ala | Val | His | Ile | Arg | Val | 125 | 130 | 135 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ala | Ser | Leu | Thr | Val | Ile | Leu | Ala | Ile | Phe | Met | Val | Ile | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Leu | Val | Lys | Val | Asp | Thr | Ser | Ser | Trp | Thr | Arg | Gly | Phe | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Val | Thr | Ile | Val | Cys | Met | Val | Ile | Leu | Ser | Gly | Ala | Ser | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Val | Phe | Ser | Ser | Ser | Ile | Tyr | Gly | Met | Thr | Gly | Ser | Phe | Pro | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Asn | Ser | Gln | Ala | Leu | Ile | Ser | Gly | Gly | Ala | Met | Gly | Gly | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Ser | Ala | Val | Ala | Ser | Leu | Val | Asp | Leu | Ala | Ala | Ser | Ser | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Arg | Asn | Ser | Ala | Leu | Ala | Phe | Phe | Leu | Thr | Ala | Thr | Ile | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Val | Leu | Cys | Met | Gly | Leu | Tyr | Leu | Leu | Leu | Ser | Arg | Leu | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Ala | Arg | Tyr | Tyr | Met | Arg | Pro | Val | Leu | Ala | Ala | His | Val | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Gly | Glu | Glu | Glu | Leu | Pro | Gln | Asp | Ser | Leu | Ser | Ala | Pro | Ser | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Val | Ala | Ser | Arg | Phe | Ile | Asp | Ser | His | Thr | Pro | Pro | Leu | Arg | Pro | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Leu | Lys | Lys | Thr | Ala | Ser | Leu | Gly | Phe | Cys | Val | Thr | Tyr | Val | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Phe | Ile | Thr | Ser | Leu | Ile | Tyr | Pro | Ala | Val | Cys | Thr | Asn | Ile | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ser | Leu | Asn | Lys | Gly | Ser | Gly | Ser | Leu | Trp | Thr | Thr | Lys | Phe | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Phe | Ile | Pro | Leu | Thr | Thr | Phe | Leu | Leu | Tyr | Asn | Phe | Ala | Asp | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Cys | Gly | Arg | Gln | Leu | Thr | Ala | Trp | Ile | Gln | Val | Pro | Gly | Pro | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Lys | Ala | Leu | Pro | Gly | Phe | Val | Leu | Leu | Arg | Thr | Cys | Leu | Ile | |
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| Pro | Leu | Phe | Val | Leu | Cys | Asn | Tyr | Gln | Pro | Arg | Val | His | Leu | Lys | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Val | Val | Phe | Gln | Ser | Asp | Val | Tyr | Pro | Ala | Leu | Leu | Ser | Ser | |
| | | | | 410 | | | | | 415 | | | | | 420 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gly | Leu | Ser | Asn | Gly | Tyr | Leu | Ser | Thr | Leu | Ala | Leu | Leu |
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| Val | Val | Met | Ser | Phe | Tyr | Val | Cys | Leu | Gly | Leu | Thr | Leu | Gly | Ser |
| | | | | 455 | | | | | 460 | | | | | 465 |
| | | | | | | | | | | | | | | |
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65 70 75
Lys Val Leu Ser Asp Ala Gly His Lys Val Thr Ile Leu Glu Ala
80 85 90
Asp Asn Arg Ile Gly Gly Arg Ile Phe Thr Tyr Arg Asp Gln Asn
95 100 105
Thr Gly Trp Ile Gly Glu Leu Gly Ala Met Arg Met Pro Ser Ser
110 115 120
His Arg Ile Leu His Lys Leu Cys Gln Gly Leu Gly Leu Asn Leu
125 130 135
Thr Lys Phe Thr Gln Tyr Asp Lys Asn Thr Trp Thr Glu Val His
140 145 150
Glu Val Lys Leu Arg Asn Tyr Val Val Glu Lys Val Pro Glu Lys
155 160 165
Leu Gly Tyr Ala Leu Arg Pro Gln Glu Lys Gly His Ser Pro Glu
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Asp Ile Tyr Gln Met Ala Leu Asn Gln Ala Leu Lys Asp Leu Lys
185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Gly | Cys | Arg | Lys | Ala | Met | Lys | Lys | Phe | Glu | Arg | His | Thr | 200 | 205 | 210 |
| Leu | Leu | Glu | Tyr | Leu | Leu | Gly | Glu | Gly | Asn | Leu | Ser | Arg | Pro | Ala | 215 | 220 | 225 |
| Val | Gln | Leu | Leu | Gly | Asp | Val | Met | Ser | Glu | Asp | Gly | Phe | Phe | Tyr | 230 | 235 | 240 |
| Leu | Ser | Phe | Ala | Glu | Ala | Leu | Arg | Ala | His | Ser | Cys | Leu | Ser | Asp | 245 | 250 | 255 |
| Arg | Leu | Gln | Tyr | Ser | Arg | Ile | Val | Gly | Gly | Trp | Asp | Leu | Leu | Pro | 260 | 265 | 270 |
| Arg | Ala | Leu | Leu | Ser | Ser | Leu | Ser | Gly | Leu | Val | Leu | Leu | Asn | Ala | 275 | 280 | 285 |
| Pro | Val | Val | Ala | Met | Thr | Gln | Gly | Pro | His | Asp | Val | His | Val | Gln | 290 | 295 | 300 |
| Ile | Glu | Thr | Ser | Pro | Pro | Ala | Arg | Asn | Leu | Lys | Val | Leu | Lys | Ala | 305 | 310 | 315 |
| Asp | Val | Val | Leu | Leu | Thr | Ala | Ser | Gly | Pro | Ala | Val | Lys | Arg | Ile | 320 | 325 | 330 |
| Thr | Phe | Ser | Pro | Pro | Leu | Pro | Arg | His | Met | Gln | Glu | Ala | Leu | Arg | 335 | 340 | 345 |
| Arg | Leu | His | Tyr | Val | Pro | Ala | Thr | Lys | Val | Phe | Leu | Ser | Phe | Arg | 350 | 355 | 360 |
| Arg | Pro | Phe | Trp | Arg | Glu | Glu | His | Ile | Glu | Gly | Gly | His | Ser | Asn | 365 | 370 | 375 |
| Thr | Asp | Arg | Pro | Ser | Arg | Met | Ile | Phe | Tyr | Pro | Pro | Pro | Arg | Glu | 380 | 385 | 390 |
| Gly | Ala | Leu | Leu | Leu | Ala | Ser | Tyr | Thr | Trp | Ser | Asp | Ala | Ala | Ala | 395 | 400 | 405 |
| Ala | Phe | Ala | Gly | Leu | Ser | Arg | Glu | Glu | Ala | Leu | Arg | Leu | Ala | Leu | 410 | 415 | 420 |
| Asp | Asp | Val | Ala | Ala | Leu | His | Gly | Pro | Val | Val | Arg | Gln | Leu | Trp | 425 | 430 | 435 |
| Asp | Gly | Thr | Gly | Val | Val | Lys | Arg | Trp | Ala | Glu | Asp | Gln | His | Ser | 440 | 445 | 450 |
| Gln | Gly | Gly | Phe | Val | Val | Gln | Pro | Pro | Ala | Leu | Trp | Gln | Thr | Glu | 455 | 460 | 465 |
| Lys | Asp | Asp | Trp | Thr | Val | Pro | Tyr | Gly | Arg | Ile | Tyr | Phe | Ala | Gly | 470 | 475 | 480 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | His | Thr | Ala | Tyr | Pro | His | Gly | Trp | Val | Glu | Thr | Ala | Val | Lys |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Ala | Leu | Arg | Ala | Ala | Ile | Lys | Ile | Asn | Ser | Arg | Lys | Gly | Pro |
| | | | | 500 | | | | | 505 | | | | | 510 |
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| | | | | 515 | | | | | 520 | | | | | 525 |
| Gly | Gln | Gly | His | Val | His | Gly | Val | Ala | Ser | Ser | Pro | Ser | His | Asp |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Ala | Lys | Glu | Glu | Gly | Ser | His | Pro | Pro | Val | Gln | Gly | Gln | Leu |
| | | | | 545 | | | | | 550 | | | | | 555 |
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Gly Ser Pro His Ser Leu Glu Ala Leu Arg Asp Ala Ala Pro Ser

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| Gln | Gly | Leu | Asn | Phe | Leu | Leu | Leu | Phe | Thr | Lys | Met | Leu | Phe | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Asn | Phe | Leu | Phe | Ser | Pro | Leu | Pro | Thr | Pro | Ala | Leu | Ile | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ile | Leu | Thr | Phe | Gly | Ala | Ala | Ile | Phe | Leu | Trp | Leu | Ile | Thr | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Gln | Pro | Val | Leu | Pro | Leu | Leu | Asp | Leu | Asn | Asn | Gln | Ser | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Ile | Glu | Gly | Gly | Ala | Arg | Lys | Gly | Val | Ser | Gln | Lys | Asn | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Leu | Thr | Ser | Cys | Cys | Phe | Ser | Asp | Ala | Lys | Thr | Met | Tyr | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Phe | Gln | Arg | Gly | Leu | Ala | Val | Ser | Asp | Asn | Gly | Pro | Cys | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Tyr | Arg | Lys | Pro | Asn | Gln | Pro | Tyr | Arg | Trp | Leu | Ser | Tyr | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gln | Val | Ser | Asp | Arg | Ala | Glu | Tyr | Leu | Gly | Ser | Cys | Leu | Leu | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Gly | Tyr | Lys | Ser | Ser | Pro | Asp | Gln | Phe | Val | Gly | Ile | Phe | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Asn | Arg | Pro | Glu | Trp | Ile | Ile | Ser | Glu | Leu | Ala | Cys | Tyr | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Tyr | Ser | Met | Val | Ala | Val | Pro | Leu | Tyr | Asp | Thr | Leu | Gly | Pro | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ile | Val | His | Ile | Val | Asn | Lys | Ala | Asp | Ile | Ala | Met | Val | Ile |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Cys | Asp | Thr | Pro | Gln | Lys | Ala | Leu | Val | Leu | Ile | Gly | Asn | Val | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Gly | Phe | Thr | Pro | Ser | Leu | Lys | Val | Ile | Ile | Leu | Met | Asp | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Phe | Asp | Asp | Asp | Leu | Lys | Gln | Arg | Gly | Glu | Lys | Ser | Gly | Ile | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ile | Leu | Ser | Leu | Tyr | Asp | Ala | Glu | Asn | Leu | Gly | Lys | Glu | His | Phe |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Arg | Lys | Pro | Val | Pro | Pro | Ser | Pro | Glu | Asp | Leu | Ser | Val | Ile | Cys |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Phe | Thr | Ser | Gly | Thr | Thr | Gly | Asp | Pro | Lys | Gly | Ala | Met | Ile | Thr |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 320 | | 325 | | 330 |
| His Gln Asn Ile Val Ser Asn Ala Ala Ala Phe Leu Lys Cys Val | 335 | | 340 | | 345 |
| Glu His Ala Tyr Glu Pro Thr Pro Asp Asp Val Ala Ile Ser Tyr | 350 | | 355 | | 360 |
| Leu Pro Leu Ala His Met Phe Glu Arg Ile Val Gln Ala Val Val | 365 | | 370 | | 375 |
| Tyr Ser Cys Gly Ala Arg Val Gly Phe Phe Gln Gly Asp Ile Arg | 380 | | 385 | | 390 |
| Leu Leu Ala Asp Asp Met Lys Thr Leu Lys Pro Thr Leu Phe Pro | 395 | | 400 | | 405 |
| Ala Val Pro Arg Leu Leu Asn Arg Ile Tyr Asp Lys Val Gln Asn | 410 | | 415 | | 420 |
| Glu Ala Lys Thr Pro Leu Lys Lys Phe Leu Leu Lys Leu Ala Val | 425 | | 430 | | 435 |
| Ser Ser Lys Phe Lys Glu Leu Gln Lys Gly Ile Ile Arg His Asp | 440 | | 445 | | 450 |
| Ser Phe Trp Asp Lys Leu Ile Phe Ala Lys Ile Gln Asp Ser Leu | 455 | | 460 | | 465 |
| Gly Gly Arg Val Arg Val Ile Val Thr Gly Ala Ala Pro Met Ser | 470 | | 475 | | 480 |
| Thr Ser Val Met Thr Phe Phe Arg Ala Ala Met Gly Cys Gln Val | 485 | | 490 | | 495 |
| Tyr Glu Ala Tyr Gly Gln Thr Glu Cys Thr Gly Gly Cys Thr Phe | 500 | | 505 | | 510 |
| Thr Leu Pro Gly Asp Trp Thr Ser Gly His Val Gly Val Pro Leu | 515 | | 520 | | 525 |
| Ala Cys Asn Tyr Val Lys Leu Glu Asp Val Ala Asp Met Asn Tyr | 530 | | 535 | | 540 |
| Phe Thr Val Asn Asn Glu Gly Glu Val Cys Ile Lys Gly Thr Asn | 545 | | 550 | | 555 |
| Val Phe Lys Gly Tyr Leu Lys Asp Pro Glu Lys Thr Gln Glu Ala | 560 | | 565 | | 570 |
| Leu Asp Ser Asp Gly Trp Leu His Thr Gly Asp Ile Gly Arg Trp | 575 | | 580 | | 585 |
| Leu Pro Asn Gly Thr Leu Lys Ile Ile Asp Arg Lys Lys Asn Ile | 590 | | 595 | | 600 |
| Phe Lys Leu Ala Gln Gly Glu Tyr Ile Ala Pro Glu Lys Ile Glu | | | | | |

| 605 | | | | | | | | | | 610 | | | | | 615 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asn | Ile | Tyr | Asn | Arg | Ser | Gln | Pro | Val | Leu | Gln | Ile | Phe | Val | His | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Gly | Glu | Ser | Leu | Arg | Ser | Ser | Leu | Val | Gly | Val | Val | Val | Pro | Asp | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Thr | Asp | Val | Leu | Pro | Ser | Phe | Ala | Ala | Lys | Leu | Gly | Val | Lys | Gly | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Ser | Phe | Glu | Glu | Leu | Cys | Gln | Asn | Gln | Val | Val | Arg | Glu | Ala | Ile | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Leu | Glu | Asp | Leu | Gln | Lys | Ile | Gly | Lys | Glu | Ser | Gly | Leu | Lys | Thr | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Phe | Glu | Gln | Val | Lys | Ala | Ile | Phe | Leu | His | Pro | Glu | Pro | Phe | Ser | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ile | Glu | Asn | Gly | Leu | Leu | Thr | Pro | Thr | Leu | Lys | Ala | Lys | Arg | Gly | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Glu | Leu | Ser | Lys | Tyr | Phe | Arg | Thr | Gln | Ile | Asp | Ser | Leu | Tyr | Glu | | | | | |
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His Ile Gln Asp

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 Thr Arg Arg Ala Ile Ser Glu Ala Asn Glu Asp Pro Glu Pro Glu
 65 70 75
 Gln Asp Tyr Asp Glu Ala Leu Gly Arg Leu Glu Pro Pro Arg Arg
 80 85 90
 Arg Gly Ser Gly Pro Arg Arg Val Leu Asp Val Glu Val Tyr Ser
 95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Lys | Val | Tyr | Val | Ala | Val | Asp | Gly | Thr | Thr | Val | Leu | 110 | 115 | 120 |
| Glu | Asp | Glu | Ala | Arg | Glu | Gln | Gly | Arg | Gly | Ile | His | Val | Ile | Val | 125 | 130 | 135 |
| Leu | Asn | Gln | Ala | Thr | Gly | His | Val | Met | Ala | Lys | Arg | Val | Phe | Asp | 140 | 145 | 150 |
| Thr | Tyr | Ser | Pro | His | Glu | Asp | Glu | Ala | Met | Val | Leu | Phe | Leu | Asn | 155 | 160 | 165 |
| Met | Val | Ala | Pro | Gly | Arg | Val | Leu | Ile | Cys | Thr | Val | Lys | Asp | Glu | 170 | 175 | 180 |
| Gly | Ser | Phe | His | Leu | Lys | Asp | Thr | Ala | Lys | Ala | Leu | Leu | Arg | Ser | 185 | 190 | 195 |
| Leu | Gly | Ser | Gln | Ala | Gly | Pro | Ala | Leu | Gly | Trp | Arg | Asp | Thr | Trp | 200 | 205 | 210 |
| Ala | Phe | Val | Gly | Arg | Lys | Gly | Gly | Pro | Val | Phe | Gly | Glu | Lys | His | 215 | 220 | 225 |
| Ser | Lys | Ser | Pro | Ala | Leu | Ser | Ser | Trp | Gly | Asp | Pro | Val | Leu | Leu | 230 | 235 | 240 |
| Lys | Thr | Asp | Val | Pro | Leu | Ser | Ser | Ala | Glu | Glu | Ala | Glu | Cys | His | 245 | 250 | 255 |
| Trp | Ala | Asp | Thr | Glu | Leu | Asn | Arg | Arg | Arg | Arg | Arg | Phe | Cys | Ser | 260 | 265 | 270 |
| Lys | Val | Glu | Gly | Tyr | Gly | Ser | Val | Cys | Ser | Cys | Lys | Asp | Pro | Thr | 275 | 280 | 285 |
| Pro | Ile | Glu | Phe | Ser | Pro | Asp | Pro | Leu | Pro | Asp | Asn | Lys | Val | Leu | 290 | 295 | 300 |
| Asn | Val | Pro | Val | Ala | Val | Ile | Ala | Gly | Asn | Arg | Pro | Asn | Tyr | Leu | 305 | 310 | 315 |
| Tyr | Arg | Met | Leu | Arg | Ser | Leu | Leu | Ser | Ala | Gln | Gly | Val | Ser | Pro | 320 | 325 | 330 |
| Gln | Met | Ile | Thr | Val | Phe | Ile | Asp | Gly | Tyr | Tyr | Glu | Glu | Pro | Met | 335 | 340 | 345 |
| Asp | Val | Val | Ala | Leu | Phe | Gly | Leu | Arg | Gly | Ile | Gln | His | Thr | Pro | 350 | 355 | 360 |
| Ile | Ser | Ile | Lys | Asn | Ala | Arg | Val | Ser | Gln | His | Tyr | Lys | Ala | Ser | 365 | 370 | 375 |
| Leu | Thr | Ala | Thr | Phe | Asn | Leu | Phe | Pro | Glu | Ala | Lys | Phe | Ala | Val | 380 | 385 | 390 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Leu | Glu | Glu | Asp | Leu | Asp | Ile | Ala | Val | Asp | Phe | Phe | Ser | Phe | | 395 | 400 | 405 |
| Leu | Ser | Gln | Ser | Ile | His | Leu | Leu | Glu | Glu | Asp | Asp | Ser | Leu | Tyr | | 410 | 415 | 420 |
| Cys | Ile | Ser | Ala | Trp | Asn | Asp | Gln | Gly | Tyr | Glu | His | Thr | Ala | Glu | | 425 | 430 | 435 |
| Asp | Pro | Ala | Leu | Leu | Tyr | Arg | Val | Glu | Thr | Met | Pro | Gly | Leu | Gly | | 440 | 445 | 450 |
| Trp | Val | Leu | Arg | Arg | Ser | Leu | Tyr | Lys | Glu | Glu | Leu | Glu | Pro | Lys | | 455 | 460 | 465 |
| Trp | Pro | Thr | Pro | Glu | Lys | Leu | Trp | Asp | Trp | Asp | Met | Trp | Met | Arg | | 470 | 475 | 480 |
| Met | Pro | Glu | Gln | Arg | Arg | Gly | Arg | Glu | Cys | Ile | Ile | Pro | Asp | Val | | 485 | 490 | 495 |
| Ser | Arg | Ser | Tyr | His | Phe | Gly | Ile | Val | Gly | Leu | Asn | Met | Asn | Gly | | 500 | 505 | 510 |
| Tyr | Phe | His | Glu | Ala | Tyr | Phe | Lys | Lys | His | Lys | Phe | Asn | Thr | Val | | 515 | 520 | 525 |
| Pro | Gly | Val | Gln | Leu | Arg | Asn | Val | Asp | Ser | Leu | Lys | Lys | Glu | Ala | | 530 | 535 | 540 |
| Tyr | Glu | Val | Glu | Val | His | Arg | Leu | Leu | Ser | Glu | Ala | Glu | Val | Leu | | 545 | 550 | 555 |
| Asp | His | Ser | Lys | Asn | Pro | Cys | Glu | Asp | Ser | Phe | Leu | Pro | Asp | Thr | | 560 | 565 | 570 |
| Glu | Gly | His | Thr | Tyr | Val | Ala | Phe | Ile | Arg | Met | Glu | Lys | Asp | Asp | | 575 | 580 | 585 |
| Asp | Phe | Thr | Thr | Trp | Thr | Gln | Leu | Ala | Lys | Cys | Leu | His | Ile | Trp | | 590 | 595 | 600 |
| Asp | Leu | Asp | Val | Arg | Gly | Asn | His | Arg | Gly | Leu | Trp | Arg | Leu | Phe | | 605 | 610 | 615 |
| Arg | Lys | Lys | Asn | His | Phe | Leu | Val | Val | Gly | Val | Pro | Ala | Ser | Pro | | 620 | 625 | 630 |
| Tyr | Ser | Val | Lys | Lys | Pro | Pro | Ser | Val | Thr | Pro | Ile | Phe | Leu | Glu | | 635 | 640 | 645 |
| Pro | Pro | Pro | Lys | Glu | Glu | Gly | Ala | Pro | Gly | Ala | Pro | Glu | Gln | Thr | | 650 | 655 | 660 |

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<212> PRT

<213> Homo sapiens

<400> 95

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| Met | Asp | Asp | Phe | Ile | Ser | Ile | Ser | Leu | Leu | Ser | Leu | Ala | Met | Leu | 1 | 5 | 10 | 15 |
| Val | Gly | Cys | Tyr | Val | Ala | Gly | Ile | Ile | Pro | Leu | Ala | Val | Asn | Phe | 20 | 25 | 30 | |
| Ser | Glu | Glu | Arg | Leu | Lys | Leu | Val | Thr | Val | Leu | Gly | Ala | Gly | Leu | 35 | 40 | 45 | |
| Leu | Cys | Gly | Thr | Ala | Leu | Ala | Val | Ile | Val | Pro | Glu | Gly | Val | His | 50 | 55 | 60 | |
| Ala | Leu | Tyr | Glu | Asp | Ile | Leu | Glu | Gly | Lys | His | His | Gln | Ala | Ser | 65 | 70 | 75 | |
| Glu | Thr | His | Asn | Val | Ile | Ala | Ser | Asp | Lys | Ala | Ala | Glu | Lys | Ser | 80 | 85 | 90 | |
| Val | Val | His | Glu | His | Glu | His | Ser | His | Asp | His | Thr | Gln | Leu | His | 95 | 100 | 105 | |
| Ala | Tyr | Ile | Gly | Val | Ser | Leu | Val | Leu | Gly | Phe | Val | Phe | Met | Leu | 110 | 115 | 120 | |
| Leu | Val | Asp | Gln | Ile | Gly | Asn | Ser | His | Val | His | Ser | Thr | Asp | Asp | 125 | 130 | 135 | |
| Pro | Glu | Ala | Ala | Arg | Ser | Ser | Asn | Ser | Lys | Ile | Thr | Thr | Thr | Leu | 140 | 145 | 150 | |
| Gly | Leu | Val | Val | His | Ala | Ala | Ala | Asp | Gly | Val | Ala | Leu | Gly | Ala | 155 | 160 | 165 | |
| Ala | Ala | Ser | Thr | Ser | Gln | Thr | Ser | Val | Gln | Leu | Ile | Val | Phe | Val | 170 | 175 | 180 | |
| Ala | Ile | Met | Leu | His | Lys | Ala | Pro | Ala | Ala | Phe | Gly | Leu | Val | Ser | 185 | 190 | 195 | |
| Phe | Leu | Met | His | Ala | Gly | Leu | Glu | Arg | Asn | Arg | Ile | Arg | Lys | His | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Val | Phe | Ala | Leu | Ala | Ala | Pro | Val | Met | Ser | Met | Val | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| | | | | | | | | | | | | | | | |
| Tyr | Leu | Gly | Leu | Ser | Lys | Ser | Ser | Lys | Glu | Ala | Leu | Ser | Glu | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| | | | | | | | | | | | | | | | |
| Asn | Ala | Thr | Gly | Val | Ala | Met | Leu | Phe | Ser | Ala | Gly | Thr | Phe | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| | | | | | | | | | | | | | | | |
| Tyr | Val | Ala | Thr | Val | His | Val | Leu | Pro | Glu | Val | Gly | Gly | Ile | Gly | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| | | | | | | | | | | | | | | | |
| His | Ser | His | Lys | Pro | Asp | Ala | Thr | Gly | Gly | Arg | Gly | Leu | Ser | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| | | | | | | | | | | | | | | | |
| Leu | Glu | Val | Ala | Ala | Leu | Val | Leu | Gly | Cys | Leu | Ile | Pro | Leu | Ile | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| | | | | | | | | | | | | | | | |
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<213> Homo sapiens

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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Leu | Ala | Ala | Leu | Val | Ala | Cys | Ile | Ile | Val | Leu | Gly | Phe |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Tyr | Trp | Ile | Ala | Ser | Ser | Arg | Ser | Val | Asp | Leu | Gln | Thr | Arg |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Met | Glu | Leu | Glu | Gly | Arg | Val | Arg | Arg | Ala | Ala | Ala | Glu | Arg |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Val | Glu | Leu | Lys | Lys | Asn | Glu | Phe | Gln | Gly | Glu | Leu | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gln | Arg | Glu | Gln | Leu | Asp | Lys | Ile | Gln | Ser | Ser | His | Asn | Phe |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Glu | Ser | Val | Asn | Lys | Leu | Tyr | Gln | Asp | Glu | Lys | Ala | Val |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Asn | Asn | Ile | Thr | Thr | Gly | Glu | Arg | Leu | Ile | Arg | Val | Leu |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asp | Gln | Leu | Lys | Thr | Leu | Gln | Arg | Asn | Tyr | Gly | Arg | Leu | Gln |
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| Gln | Asp | Val | Leu | Gln | Phe | Gln | Lys | Asn | Gln | Thr | Asn | Leu | Glu | Arg |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Phe | Ser | Tyr | Asp | Leu | Ser | Gln | Cys | Ile | Asn | Gln | Met | Lys | Glu |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Lys | Glu | Gln | Cys | Glu | Glu | Arg | Ile | Glu | Glu | Val | Thr | Lys | Lys |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Glu | Ala | Val | Ala | Ser | Arg | Asp | Leu | Ser | Glu | Asn | Asn | Asp |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Ala | Gly | Leu | Pro | His | Thr | Glu | Val | Pro | Gln | Gly | Lys | Gly |
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Asn Val Leu Gly Asn Ser Lys Ser Gln Thr Pro Ala Pro Ser Ser

| 230 | 235 | 240 |
|-------------------------------------|-------------------------|-----|
| Glu Val Val Leu Asp Ser Lys Arg Gln | Val Glu Lys Glu Glu Thr | |
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| Asn Glu Ile Gln Val Val Asn Glu Glu | Pro Gln Arg Asp Arg Leu | |
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| Pro Gln Glu Pro Gly Arg Glu Gln Val | Val Glu Asp Arg Pro Val | |
| 275 | 280 | 285 |
| Gly Gly Arg Gly Phe Gly Gly Ala Gly | Glu Leu Gly Gln Thr Pro | |
| 290 | 295 | 300 |
| Gln Val Gln Ala Ala Leu Ser Val Ser | Gln Glu Asn Pro Glu Met | |
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| Glu Gly Pro Glu Arg Asp Gln Leu Val | Ile Pro Asp Gly Gln Glu | |
| 320 | 325 | 330 |
| Glu Glu Gln Glu Ala Ala Gly Glu Gly | Arg Asn Gln Gln Lys Leu | |
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| Arg Gly Glu Asp Asp Tyr Asn Met Asp | Glu Asn Glu Ala Glu Ser | |
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| Glu Thr Asp Lys Gln Ala Ala Leu Ala | Gly Asn Asp Arg Asn Ile | |
| 365 | 370 | 375 |
| Asp Val Phe Asn Val Glu Asp Gln Lys | Arg Asp Thr Ile Asn Leu | |
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| Met | Gln | Lys | Ala | Ser | Val | Leu | Leu | Phe | Leu | Ala | Trp | Val | Cys | Phe | 1 | 5 | 10 | 15 |
| Leu | Phe | Tyr | Ala | Gly | Ile | Ala | Leu | Phe | Thr | Ser | Gly | Phe | Leu | Leu | 20 | 25 | 30 | |
| Thr | Arg | Leu | Glu | Leu | Thr | Asn | His | Ser | Ser | Cys | Gln | Glu | Pro | Pro | 35 | 40 | 45 | |
| Gly | Pro | Gly | Ser | Leu | Pro | Trp | Gly | Ser | Gln | Gly | Lys | Pro | Gly | Ala | 50 | 55 | 60 | |
| Cys | Trp | Met | Ala | Ser | Arg | Phe | Ser | Arg | Val | Val | Leu | Val | Leu | Ile | 65 | 70 | 75 | |
| Asp | Ala | Leu | Arg | Phe | Asp | Phe | Ala | Gln | Pro | Gln | His | Ser | His | Val | 80 | 85 | 90 | |
| Pro | Arg | Glu | Pro | Pro | Val | Ser | Leu | Pro | Phe | Leu | Gly | Lys | Leu | Ser | 95 | 100 | 105 | |
| Ser | Leu | Gln | Arg | Ile | Leu | Glu | Ile | Gln | Pro | His | His | Ala | Arg | Leu | 110 | 115 | 120 | |
| Tyr | Arg | Ser | Gln | Val | Asp | Pro | Pro | Thr | Thr | Thr | Met | Gln | Arg | Leu | 125 | 130 | 135 | |
| Lys | Ala | Leu | Thr | Thr | Gly | Ser | Leu | Pro | Thr | Phe | Ile | Asp | Ala | Gly | 140 | 145 | 150 | |
| Ser | Asn | Phe | Ala | Ser | His | Ala | Ile | Val | Glu | Asp | Asn | Leu | Ile | Lys | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Leu | Thr | Ser | Ala | Gly | Arg | Arg | Val | Val | Phe | Met | Gly | Asp | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Trp | Lys | Asp | Leu | Phe | Pro | Gly | Ala | Phe | Ser | Lys | Ala | Phe | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Pro | Ser | Phe | Asn | Val | Arg | Asp | Leu | Asp | Thr | Val | Asp | Asn | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Leu | Glu | His | Leu | Tyr | Pro | Thr | Met | Asp | Ser | Gly | Glu | Trp | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Leu | Ile | Ala | His | Phe | Leu | Gly | Val | Asp | His | Cys | Gly | His | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| His | Gly | Pro | His | His | Pro | Glu | Met | Ala | Lys | Lys | Leu | Ser | Gln | Met | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Gln | Val | Ile | Gln | Gly | Leu | Val | Glu | Arg | Leu | Glu | Asn | Asp | Thr | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Leu | Val | Val | Ala | Gly | Asp | His | Gly | Met | Thr | Thr | Asn | Gly | Asp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Gly | Gly | Asp | Ser | Glu | Leu | Glu | Val | Ser | Ala | Ala | Leu | Phe | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Tyr | Ser | Pro | Thr | Ala | Val | Phe | Pro | Ser | Thr | Pro | Pro | Glu | Glu | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
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| | | | | 335 | | | | | 340 | | | | | 345 | |
| Glu | Leu | Phe | Ser | Gly | Gly | Glu | Asp | Ser | Gln | Pro | His | Ser | Ser | Ala | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
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| | | | | 365 | | | | | 370 | | | | | 375 | |
| Arg | Phe | Leu | His | Thr | Tyr | Ser | Ala | Ala | Thr | Gln | Asp | Leu | Gln | Ala | |
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| | | | | 395 | | | | | 400 | | | | | 405 | |
| Asp | Tyr | Gln | Trp | Leu | Leu | Gln | Ser | Pro | Lys | Gly | Ala | Glu | Ala | Thr | |
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| Met | Ala | Gly | Gly | Thr | Ala | Leu | Leu | Ala | Ala | Ser | Cys | Phe | Ile | Cys | |
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| Leu | Leu | Ala | Ser | Gln | Trp | Ala | Ile | Ser | Pro | Gly | Phe | Pro | Phe | Cys | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Pro | Leu | Leu | Leu | Thr | Pro | Val | Ala | Trp | Gly | Leu | Val | Gly | Ala | Ile | |
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| Ala | Tyr | Ala | Gly | Leu | Leu | Gly | Thr | Ile | Glu | Leu | Lys | Leu | Asp | Leu | |
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| Leu | Trp | Lys | Ala | Trp | Ala | Gly | Trp | Gly | Ser | Lys | Arg | Pro | Leu | Ala | |
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| Thr | Leu | Phe | Pro | Ile | Pro | Gly | Pro | Val | Leu | Leu | Leu | Leu | Leu | Phe | |
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| Arg | Leu | Ala | Val | Phe | Phe | Ser | Asp | Ser | Phe | Val | Val | Ala | Glu | Ala | |
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| | | | | 575 | | | | | 580 | | | | | 585 | |
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| His | Asn | Gly | Ala | Tyr | Ala | Leu | Arg | Leu | Gly | Ile | Gly | Leu | Leu | Leu | |
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| Pro | Val | Cys | His | Ser | Ser | Pro | Trp | Leu | Ser | Pro | Leu | Ala | Ser | Met | |
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| Ala | Leu | Val | Ala | Leu | Leu | Ala | Ala | Val | Arg | Leu | Trp | Leu | Arg | Arg | |
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| | | | | | |
|-----------------|---------------------|-------------------------|------|------|------|
| Val Ser Gly Ala | Ser Met Val Leu Pro | Arg Ala Val Ala Gly Leu | 740 | 745 | 750 |
| Ala Ala Ser Gly | Leu Ala Leu Leu Leu | Trp Lys Pro Val Thr Val | 755 | 760 | 765 |
| Leu Val Lys Ala | Gly Ala Gly Ala Pro | Arg Thr Arg Thr Val Leu | 770 | 775 | 780 |
| Thr Pro Phe Ser | Gly Pro Pro Thr Ser | Gln Ala Asp Leu Asp Tyr | 785 | 790 | 795 |
| Val Val Pro Gln | Ile Tyr Arg His Met | Gln Glu Glu Phe Arg Gly | 800 | 805 | 810 |
| Arg Leu Glu Arg | Thr Lys Ser Gln Gly | Pro Leu Thr Val Ala Ala | 815 | 820 | 825 |
| Tyr Gln Leu Gly | Ser Val Tyr Ser Ala | Ala Met Val Thr Ala Leu | 830 | 835 | 840 |
| Thr Leu Leu Ala | Phe Pro Leu Leu Leu | Leu His Ala Glu Arg Ile | 845 | 850 | 855 |
| Ser Leu Val Phe | Leu Leu Leu Phe Leu | Gln Ser Phe Leu Leu Leu | 860 | 865 | 870 |
| His Leu Leu Ala | Ala Gly Ile Pro Val | Thr Thr Pro Gly Pro Phe | 875 | 880 | 885 |
| Thr Val Pro Trp | Gln Ala Val Ser Ala | Trp Ala Leu Met Ala Thr | 890 | 895 | 900 |
| Gln Thr Phe Tyr | Ser Thr Gly His Gln | Pro Val Phe Pro Ala Ile | 905 | 910 | 915 |
| His Trp His Ala | Ala Phe Val Gly Phe | Pro Glu Gly His Gly Ser | 920 | 925 | 930 |
| Cys Thr Trp Leu | Pro Ala Leu Leu Val | Gly Ala Asn Thr Phe Ala | 935 | 940 | 945 |
| Ser His Leu Leu | Phe Ala Val Gly Cys | Pro Leu Leu Leu Leu Trp | 950 | 955 | 960 |
| Pro Phe Leu Cys | Glu Ser Gln Gly Leu | Arg Lys Arg Gln Gln Pro | 965 | 970 | 975 |
| Pro Gly Asn Glu | Ala Asp Ala Arg Val | Arg Pro Glu Glu Glu Glu | 980 | 985 | 990 |
| Glu Pro Leu Met | Glu Met Arg Leu Arg | Asp Ala Pro Gln His Phe | 995 | 1000 | 1005 |
| Tyr Ala Ala Leu | Leu Gln Leu Gly Leu | Lys Tyr Leu Phe Ile Leu | 1010 | 1015 | 1020 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|
| Gly | Ile | Gln | Ile | Leu | Ala | Cys | Ala | Leu | Ala | Ala | Ser | Ile | Leu | Arg |
| | | | | 1025 | | | | | 1030 | | | | | 1035 |
| Arg | His | Leu | Met | Val | Trp | Lys | Val | Phe | Ala | Pro | Lys | Phe | Ile | Phe |
| | | | | 1040 | | | | | 1045 | | | | | 1050 |
| Glu | Ala | Val | Gly | Phe | Ile | Val | Ser | Ser | Val | Gly | Leu | Leu | Leu | Gly |
| | | | | 1055 | | | | | 1060 | | | | | 1065 |
| Ile | Ala | Leu | Val | Met | Arg | Val | Asp | Gly | Ala | Val | Ser | Ser | Trp | Phe |
| | | | | 1070 | | | | | 1075 | | | | | 1080 |
| Arg | Gln | Leu | Phe | Leu | Ala | Gln | Gln | Arg | | | | | | |
| | | | | 1085 | | | | | | | | | | |

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 <211> 1743
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 <213> Homo sapiens

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 cttatccatc aacatgaaga atgtcctaca atggactcca ccagaggggtc 150
 ttcaaggagt taaagttact tacactgtgc agtatttcat cacaaattgg 200
 cccaccagag gtggcactga ctacagatga gaagtccatt tctgttgctc 250
 tgacagctcc agagaagtgg aagagaaatc cagaagacct tcctgtttcc 300
 atgcaacaaa tatactccaa tctgaagtat aacgtgtctg tgttgaatac 350
 taaatcaaac agaacgtggt ccagtggtgt gaccaaccac acgctgggtgc 400
 tcacctggct ggagccgaac actctttact gcgtacacgt ggagtccttc 450
 gtcccagggc cccctcgccg tgctcagcct tctgagaagc agtgtgccag 500
 gactttgaaa gatcaatcat cagagttcaa ggctaaaatc atcttctggt 550
 atgttttgcc catatctatt accgtgtttc ttttttctgt gatgggctat 600
 tccatctacc gatatatcca cgttggcaaa gagaaacacc cagcaaattt 650
 gattttgatt tatggaaatg aatttgacaa aagattcttt gtgcctgctg 700
 aaaaaatcgt gattaacttt atcacctca atatctcgga tgattctaaa 750
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 aggaggtgaa acatttaggg tatgcttcgc atttgatgga aattttttgt 900

gactctgaag aaaacacgga aggtacttct ctcaccacagc aagagtcctt 950
cagcagaaca atacccccgg ataaaacagt cattgaatat gaatatgatg 1000
tcagaaccac tgacatttgt gcggggcctg aagagcagga gctcagtttg 1050
caggaggagg tgtccacaca aggaacatta ttggagtcgc aggcagcggt 1100
ggcagtcttg ggcccgcaaa cgttacagta ctcatacacc cctcagctcc 1150
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catgcaattc atggaggaat gggggttata tgtgcagatg gaaaactgat 1450
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cgtgtgtgat tggttcatgc atgtaggctt cttacaatg atggtgggcc 1650
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<210> 104

<211> 442

<212> PRT

<213> Homo sapiens

<400> 104

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Tyr | Asn | Gly | Leu | His | Gln | Arg | Val | Phe | Lys | Glu | Leu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Thr | Leu | Cys | Ser | Ile | Ser | Ser | Gln | Ile | Gly | Pro | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Ala | Leu | Thr | Thr | Asp | Glu | Lys | Ser | Ile | Ser | Val | Val | Leu | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Pro | Glu | Lys | Trp | Lys | Arg | Asn | Pro | Glu | Asp | Leu | Pro | Val | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Met | Gln | Gln | Ile | Tyr | Ser | Asn | Leu | Lys | Tyr | Asn | Val | Ser | Val | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Thr | Lys | Ser | Asn | Arg | Thr | Trp | Ser | Gln | Cys | Val | Thr | Asn | His |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Val | Leu | Thr | Trp | Leu | Glu | Pro | Asn | Thr | Leu | Tyr | Cys | Val | 95 | 100 | 105 |
| His | Val | Glu | Ser | Phe | Val | Pro | Gly | Pro | Pro | Arg | Arg | Ala | Gln | Pro | 110 | 115 | 120 |
| Ser | Glu | Lys | Gln | Cys | Ala | Arg | Thr | Leu | Lys | Asp | Gln | Ser | Ser | Glu | 125 | 130 | 135 |
| Phe | Lys | Ala | Lys | Ile | Ile | Phe | Trp | Tyr | Val | Leu | Pro | Ile | Ser | Ile | 140 | 145 | 150 |
| Thr | Val | Phe | Leu | Phe | Ser | Val | Met | Gly | Tyr | Ser | Ile | Tyr | Arg | Tyr | 155 | 160 | 165 |
| Ile | His | Val | Gly | Lys | Glu | Lys | His | Pro | Ala | Asn | Leu | Ile | Leu | Ile | 170 | 175 | 180 |
| Tyr | Gly | Asn | Glu | Phe | Asp | Lys | Arg | Phe | Phe | Val | Pro | Ala | Glu | Lys | 185 | 190 | 195 |
| Ile | Val | Ile | Asn | Phe | Ile | Thr | Leu | Asn | Ile | Ser | Asp | Asp | Ser | Lys | 200 | 205 | 210 |
| Ile | Ser | His | Gln | Asp | Met | Ser | Leu | Leu | Gly | Lys | Ser | Ser | Asp | Val | 215 | 220 | 225 |
| Ser | Ser | Leu | Asn | Asp | Pro | Gln | Pro | Ser | Gly | Asn | Leu | Arg | Pro | Pro | 230 | 235 | 240 |
| Gln | Glu | Glu | Glu | Glu | Val | Lys | His | Leu | Gly | Tyr | Ala | Ser | His | Leu | 245 | 250 | 255 |
| Met | Glu | Ile | Phe | Cys | Asp | Ser | Glu | Glu | Asn | Thr | Glu | Gly | Thr | Ser | 260 | 265 | 270 |
| Leu | Thr | Gln | Gln | Glu | Ser | Leu | Ser | Arg | Thr | Ile | Pro | Pro | Asp | Lys | 275 | 280 | 285 |
| Thr | Val | Ile | Glu | Tyr | Glu | Tyr | Asp | Val | Arg | Thr | Thr | Asp | Ile | Cys | 290 | 295 | 300 |
| Ala | Gly | Pro | Glu | Glu | Gln | Glu | Leu | Ser | Leu | Gln | Glu | Glu | Val | Ser | 305 | 310 | 315 |
| Thr | Gln | Gly | Thr | Leu | Leu | Glu | Ser | Gln | Ala | Ala | Leu | Ala | Val | Leu | 320 | 325 | 330 |
| Gly | Pro | Gln | Thr | Leu | Gln | Tyr | Ser | Tyr | Thr | Pro | Gln | Leu | Gln | Asp | 335 | 340 | 345 |
| Leu | Asp | Pro | Leu | Ala | Gln | Glu | His | Thr | Asp | Ser | Glu | Glu | Gly | Pro | 350 | 355 | 360 |
| Glu | Glu | Glu | Pro | Ser | Thr | Thr | Leu | Val | Asp | Trp | Asp | Pro | Gln | Thr | 365 | 370 | 375 |

Gly Arg Leu Cys Ile Pro Ser Leu Ser Ser Phe Asp Gln Asp Ser
380 385 390

Glu Gly Cys Glu Pro Ser Glu Gly Asp Gly Leu Gly Glu Glu Gly
395 400 405

Leu Leu Ser Arg Leu Tyr Glu Glu Pro Ala Pro Asp Arg Pro Pro
410 415 420

Gly Glu Asn Glu Thr Tyr Leu Met Gln Phe Met Glu Glu Trp Gly
425 430 435

Leu Tyr Val Gln Met Glu Asn
440

<210> 105

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 105

cgctgctgct gttgctcctg g 21

<210> 106

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 106

cagtgtgccca ggactttg 18

<210> 107

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 107

agtcgcaggc agcggttg 18

<210> 108

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 108
ctcctccgag tctgtgtgct cctgc 25

<210> 109

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 109

ggacgggcag ttccctgtgt ctctggtggt ttgcctaaac ctgcaaacad 50

c 51

<210> 110

<211> 1114

<212> DNA

<213> Homo sapiens

<400> 110

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cgcagcctg cgtctgccat ggggctcggg ttgaggggct ggggacgtcc 100

tctgtgact gtggccaccg ccctgatgct gcccgtaag cccccgcag 150

gctcctgggg ggcccagatc atcgggggcc acgaggtgac cccccactcc 200

aggccctaca tggcatccgt gcgcttcggg ggccaacatc actgcggagg 250

cttcctgctg cgagcccgt ggggtggtctc ggccgcccac tgcttcagcc 300

acagagacct ccgcactggc ctggtggtgc tgggcgcca cgtcctgagt 350

actgcggagc ccaccagca ggtgtttggc atcgatgctc tcaccacgca 400

ccccgactac caccatga cccacgcaa cgacatctgc ctgctgcggc 450

tgaacggctc tgctgtcctg ggccctgcag tggggctgct gaggctgcca 500

gggagaaggg ccaggcccc cacagcggg acacggtgcc ggggtgctgg 550

ctggggcttc gtgtctgact ttgaggagct gccgcctgga ctgatggagg 600

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gggcttctgc tcggccgact ccggagggcc cctggtgtgc aggaaccggg 750

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cccgcgtgt acacgcagggt gtccgccttt gtggcctgga tctgggacgt 850

ggttcggcgg agcagtcccc agcccggccc cctgcctggg accaccaggc 900

ccccaggaga agccgcctga gccacaacct tgcggcatgc aaatgagatg 950
 gccgctccag gcctggaatg ttccgtggct gggccccacg ggaagcctga 1000
 tggttcagggg tgggggtggga cgggcagcgg tggggcacac ccattccaca 1050
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 aaaaaaaaaa gaaa 1114

<210> 111
 <211> 283
 <212> PRT
 <213> Homo sapiens

<400> 111
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 20 25 30
 Gly Ala Gln Ile Ile Gly Gly His Glu Val Thr Pro His Ser Arg
 35 40 45
 Pro Tyr Met Ala Ser Val Arg Phe Gly Gly Gln His His Cys Gly
 50 55 60
 Gly Phe Leu Leu Arg Ala Arg Trp Val Val Ser Ala Ala His Cys
 65 70 75
 Phe Ser His Arg Asp Leu Arg Thr Gly Leu Val Val Leu Gly Ala
 80 85 90
 His Val Leu Ser Thr Ala Glu Pro Thr Gln Gln Val Phe Gly Ile
 95 100 105
 Asp Ala Leu Thr Thr His Pro Asp Tyr His Pro Met Thr His Ala
 110 115 120
 Asn Asp Ile Cys Leu Leu Arg Leu Asn Gly Ser Ala Val Leu Gly
 125 130 135
 Pro Ala Val Gly Leu Leu Arg Leu Pro Gly Arg Arg Ala Arg Pro
 140 145 150
 Pro Thr Ala Gly Thr Arg Cys Arg Val Ala Gly Trp Gly Phe Val
 155 160 165
 Ser Asp Phe Glu Glu Leu Pro Pro Gly Leu Met Glu Ala Lys Val
 170 175 180
 Arg Val Leu Asp Pro Asp Val Cys Asn Ser Ser Trp Lys Gly His
 185 190 195
 Leu Thr Leu Thr Met Leu Cys Thr Arg Ser Gly Asp Ser His Arg

| | 200 | 205 | 210 |
|---|-----|-----|-----|
| Arg Gly Phe Cys Ser Ala Asp Ser Gly Gly Pro Leu Val Cys Arg | 215 | 220 | 225 |
| Asn Arg Ala His Gly Leu Val Ser Phe Ser Gly Leu Trp Cys Gly | 230 | 235 | 240 |
| Asp Pro Lys Thr Pro Asp Val Tyr Thr Gln Val Ser Ala Phe Val | 245 | 250 | 255 |
| Ala Trp Ile Trp Asp Val Val Arg Arg Ser Ser Pro Gln Pro Gly | 260 | 265 | 270 |
| Pro Leu Pro Gly Thr Thr Arg Pro Pro Gly Glu Ala Ala | 275 | 280 | |

<210> 112
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 112
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<210> 113
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 113
 cgagaaggaa acgaggccgt gag 23

<210> 114
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 114
 tgacacttac catgctctgc acccgcagtg gggacagcca caga 44

<210> 115
 <211> 1808
 <212> DNA
 <213> Homo sapiens

<400> 115
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cgctgtcggc gctgggcacg gtagcaggcg ccgccgtgct gctcaaggac 150
tatgtcaccg gtggggcttg cccagcaag gccaccatcc ctgggaagac 200
ggatcatcgtg acggggcgcca acacaggcat cgggaagcag accgccttgg 250
aactggccag gagaggaggc aacatcatcc tggcctgccg agacatggag 300
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gagagcaggt gcaggtgtca tcccaggttc aggctctgca cggcatggag 1700
tgggaacccc accagctgct gctacaggac ctgggattgc ctgggactcc 1750
caccttccta tcaattctca tggtagtcca aactgcagac tctcaaactt 1800
gctcattt 1808

<210> 116

<211> 331

<212> PRT

<213> Homo sapiens

<400> 116

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Arg | Tyr | Leu | Leu | Pro | Leu | Ser | Ala | Leu | Gly | Thr | Val | Ala | 1 | 5 | 10 | 15 |
| Gly | Ala | Ala | Val | Leu | Leu | Lys | Asp | Tyr | Val | Thr | Gly | Gly | Ala | Cys | 20 | 25 | 30 | |
| Pro | Ser | Lys | Ala | Thr | Ile | Pro | Gly | Lys | Thr | Val | Ile | Val | Thr | Gly | 35 | 40 | 45 | |
| Ala | Asn | Thr | Gly | Ile | Gly | Lys | Gln | Thr | Ala | Leu | Glu | Leu | Ala | Arg | 50 | 55 | 60 | |
| Arg | Gly | Gly | Asn | Ile | Ile | Leu | Ala | Cys | Arg | Asp | Met | Glu | Lys | Cys | 65 | 70 | 75 | |
| Glu | Ala | Ala | Ala | Lys | Asp | Ile | Arg | Gly | Glu | Thr | Leu | Asn | His | His | 80 | 85 | 90 | |
| Val | Asn | Ala | Arg | His | Leu | Asp | Leu | Ala | Ser | Leu | Lys | Ser | Ile | Arg | 95 | 100 | 105 | |
| Glu | Phe | Ala | Ala | Lys | Ile | Ile | Glu | Glu | Glu | Glu | Arg | Val | Asp | Ile | 110 | 115 | 120 | |
| Leu | Ile | Asn | Asn | Ala | Gly | Val | Met | Arg | Cys | Pro | His | Trp | Thr | Thr | 125 | 130 | 135 | |
| Glu | Asp | Gly | Phe | Glu | Met | Gln | Phe | Gly | Val | Asn | His | Leu | Gly | His | 140 | 145 | 150 | |
| Phe | Leu | Leu | Thr | Asn | Leu | Leu | Leu | Asp | Lys | Leu | Lys | Ala | Ser | Ala | 155 | 160 | 165 | |
| Pro | Ser | Arg | Ile | Ile | Asn | Leu | Ser | Ser | Leu | Ala | His | Val | Ala | Gly | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Ile | Asp | Phe | Asp | Asp | Leu | Asn | Trp | Gln | Thr | Arg | Lys | Tyr | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Thr | Lys | Ala | Ala | Tyr | Cys | Gln | Ser | Lys | Leu | Ala | Ile | Val | Leu | Phe | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Lys | Glu | Leu | Ser | Arg | Arg | Leu | Gln | Gly | Ser | Gly | Val | Thr | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Ala | Leu | His | Pro | Gly | Val | Ala | Arg | Thr | Glu | Leu | Gly | Arg | His | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Gly | Ile | His | Gly | Ser | Thr | Phe | Ser | Ser | Thr | Thr | Leu | Gly | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Phe | Trp | Leu | Leu | Val | Lys | Ser | Pro | Glu | Leu | Ala | Ala | Gln | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Thr | Tyr | Leu | Ala | Val | Ala | Glu | Glu | Leu | Ala | Asp | Val | Ser | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Tyr | Phe | Asp | Gly | Leu | Lys | Gln | Lys | Ala | Pro | Ala | Pro | Glu | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Asp | Glu | Glu | Val | Ala | Arg | Arg | Leu | Trp | Ala | Glu | Ser | Ala | Arg | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Leu | Val | Gly | Leu | Glu | Ala | Pro | Ser | Val | Arg | Glu | Gln | Pro | Leu | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |

Arg

<210> 117
 <211> 2249
 <212> DNA
 <213> Homo sapiens

<400> 117
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 ctggcggtgc tggcgctcgg gacaggagac ccagaaaggg ctgcggctcg 100
 gggcgacacg ttctcgggcg tgaccagcgt ggcgcgcgcc ctggcgccccg 150
 agcgccggct gctggggctg ctgaggcggg acctgcgcgg ggaggaggcg 200
 cggctgcggg acctgactag attctacgac aagggtacttt ctttgcacga 250
 ggattcaaca acccctgtgg ctaaccctct gcttgcattt actctcatca 300
 aacgcctgca gtctgactgg aggaatgtgg tacatagtct ggaggccagt 350
 gagaacatcc gagctctgaa ggatggctat gagaaggtgg agcaagacct 400
 tccagccttt gaggaccttg agggagcagc aagggccctg atgcggctgc 450

aggacgtgta catgctcaat gtgaaaggcc tggcccgagg tgtctttcag 500
agagtcactg gctctgccat cactgacctg tacagcccca aacggctctt 550
ttctctcaca ggggatgact gcttccaagt tggcaagggtg gcctatgaca 600
tgggggatta ttacatgcc attccatggc tggaggaggc tgtcagtctc 650
ttccgaggat cttacggaga gtggaagaca gaggatgagg caagtctaga 700
agatgccttg gatcacttg cctttgctta tttccgggca ggaaatgttt 750
cgtgtgccct cagcctctct cgggagtttc ttctctacag cccagataat 800
aagaggatgg ccaggaatgt cttgaaatat gaaaggctct tggcagagag 850
ccccaaccac gtggtagctg aggctgtcat ccagaggccc aatatacccc 900
acctgcagac cagagacacc tacgaggggc tatgtcagac cctgggttcc 950
cagcccactc tctaccagat ccctagcctc tactgttcct atgagaccaa 1000
ttccaacgcc tacctgctgc tccagcccat ccggaaggag gtcattccacc 1050
tggagcccta cattgctctc taccatgact tcgtcagtga ctcagagggt 1100
cagaaaatta gagaacttgc agaaccatgg ctacagaggt cagtgggtggc 1150
atcaggggag aagcagttac aagtggagta ccgcatcagc aaaagtgcct 1200
ggctgaagga cactgttgac ccaaaactgg tgaccctcaa ccaccgcatt 1250
gctgccctca caggccttga tgtccggcct ccctatgcag agtatctgca 1300
ggtggtgaac tatggcatcg gaggacacta tgagcctcac tttgaccatg 1350
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gcaacattta tgatctatct gagctcgggtg gaagctggag gagccacagc 1450
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aagccaggag ccaaaagctg gggtaggaga ggagaaagca gagcagcctc 1750
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gggagagggt gttaccaggg gacactgaga atgtacattt gatctgcccc 1850

agccacggaa gtcagagtag gatgcacagt acaaaggagg ggggagtgga 1900
 ggcctgagag ggaagtttct ggagttcaga tactctctgt tgggaacagg 1950
 acatctcaac agtctcaggt tcgatcagtg ggtcttttgg cactttgaac 2000
 cttgaccaca gggaccaaga agtggcaatg aggacacctg caggaggggc 2050
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 agcccaagca gggagtggtc ccctcccaga agcatatccc agatgagtgg 2150
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<210> 118

<211> 544

<212> PRT

<213> Homo sapiens

<400> 118

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Pro | Gly | Ala | Arg | Leu | Ala | Ala | Leu | Leu | Ala | Val | Leu | Ala | 1 | 5 | 10 | 15 |
| Leu | Gly | Thr | Gly | Asp | Pro | Glu | Arg | Ala | Ala | Ala | Arg | Gly | Asp | Thr | 20 | 25 | 30 | |
| Phe | Ser | Ala | Leu | Thr | Ser | Val | Ala | Arg | Ala | Leu | Ala | Pro | Glu | Arg | 35 | 40 | 45 | |
| Arg | Leu | Leu | Gly | Leu | Leu | Arg | Arg | Tyr | Leu | Arg | Gly | Glu | Glu | Ala | 50 | 55 | 60 | |
| Arg | Leu | Arg | Asp | Leu | Thr | Arg | Phe | Tyr | Asp | Lys | Val | Leu | Ser | Leu | 65 | 70 | 75 | |
| His | Glu | Asp | Ser | Thr | Thr | Pro | Val | Ala | Asn | Pro | Leu | Leu | Ala | Phe | 80 | 85 | 90 | |
| Thr | Leu | Ile | Lys | Arg | Leu | Gln | Ser | Asp | Trp | Arg | Asn | Val | Val | His | 95 | 100 | 105 | |
| Ser | Leu | Glu | Ala | Ser | Glu | Asn | Ile | Arg | Ala | Leu | Lys | Asp | Gly | Tyr | 110 | 115 | 120 | |
| Glu | Lys | Val | Glu | Gln | Asp | Leu | Pro | Ala | Phe | Glu | Asp | Leu | Glu | Gly | 125 | 130 | 135 | |
| Ala | Ala | Arg | Ala | Leu | Met | Arg | Leu | Gln | Asp | Val | Tyr | Met | Leu | Asn | 140 | 145 | 150 | |
| Val | Lys | Gly | Leu | Ala | Arg | Gly | Val | Phe | Gln | Arg | Val | Thr | Gly | Ser | 155 | 160 | 165 | |
| Ala | Ile | Thr | Asp | Leu | Tyr | Ser | Pro | Lys | Arg | Leu | Phe | Ser | Leu | Thr | 170 | 175 | 180 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gly Asp Asp Cys | Phe Gln Val Gly Lys | Val Ala Tyr Asp Met | Gly |
| 185 | 190 | | 195 |
| Asp Tyr Tyr His | Ala Ile Pro Trp Leu | Glu Glu Ala Val Ser | Leu |
| 200 | 205 | | 210 |
| Phe Arg Gly Ser | Tyr Gly Glu Trp Lys | Thr Glu Asp Glu Ala | Ser |
| 215 | 220 | | 225 |
| Leu Glu Asp Ala | Leu Asp His Leu Ala | Phe Ala Tyr Phe Arg | Ala |
| 230 | 235 | | 240 |
| Gly Asn Val Ser | Cys Ala Leu Ser Leu | Ser Arg Glu Phe Leu | Leu |
| 245 | 250 | | 255 |
| Tyr Ser Pro Asp | Asn Lys Arg Met Ala | Arg Asn Val Leu Lys | Tyr |
| 260 | 265 | | 270 |
| Glu Arg Leu Leu | Ala Glu Ser Pro Asn | His Val Val Ala Glu | Ala |
| 275 | 280 | | 285 |
| Val Ile Gln Arg | Pro Asn Ile Pro His | Leu Gln Thr Arg Asp | Thr |
| 290 | 295 | | 300 |
| Tyr Glu Gly Leu | Cys Gln Thr Leu Gly | Ser Gln Pro Thr Leu | Tyr |
| 305 | 310 | | 315 |
| Gln Ile Pro Ser | Leu Tyr Cys Ser Tyr | Glu Thr Asn Ser Asn | Ala |
| 320 | 325 | | 330 |
| Tyr Leu Leu Leu | Gln Pro Ile Arg Lys | Glu Val Ile His Leu | Glu |
| 335 | 340 | | 345 |
| Pro Tyr Ile Ala | Leu Tyr His Asp Phe | Val Ser Asp Ser Glu | Ala |
| 350 | 355 | | 360 |
| Gln Lys Ile Arg | Glu Leu Ala Glu Pro | Trp Leu Gln Arg Ser | Val |
| 365 | 370 | | 375 |
| Val Ala Ser Gly | Glu Lys Gln Leu Gln | Val Glu Tyr Arg Ile | Ser |
| 380 | 385 | | 390 |
| Lys Ser Ala Trp | Leu Lys Asp Thr Val | Asp Pro Lys Leu Val | Thr |
| 395 | 400 | | 405 |
| Leu Asn His Arg | Ile Ala Ala Leu Thr | Gly Leu Asp Val Arg | Pro |
| 410 | 415 | | 420 |
| Pro Tyr Ala Glu | Tyr Leu Gln Val Val | Asn Tyr Gly Ile Gly | Gly |
| 425 | 430 | | 435 |
| His Tyr Glu Pro | His Phe Asp His Ala | Thr Ser Pro Ser Ser | Pro |
| 440 | 445 | | 450 |
| Leu Tyr Arg Met | Lys Ser Gly Asn Arg | Val Ala Thr Phe Met | Ile |
| 455 | 460 | | 465 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Ser | Ser | Val | Glu | Ala | Gly | Gly | Ala | Thr | Ala | Phe | Ile | Tyr |
| | | | | 470 | | | | | 475 | | | | | 480 |
| | | | | | | | | | | | | | | |
| Ala | Asn | Leu | Ser | Val | Pro | Val | Val | Arg | Asn | Ala | Ala | Leu | Phe | Trp |
| | | | | 485 | | | | | 490 | | | | | 495 |
| | | | | | | | | | | | | | | |
| Trp | Asn | Leu | His | Arg | Ser | Gly | Glu | Gly | Asp | Ser | Asp | Thr | Leu | His |
| | | | | 500 | | | | | 505 | | | | | 510 |
| | | | | | | | | | | | | | | |
| Ala | Gly | Cys | Pro | Val | Leu | Val | Gly | Asp | Lys | Trp | Val | Ala | Asn | Lys |
| | | | | 515 | | | | | 520 | | | | | 525 |
| | | | | | | | | | | | | | | |
| Trp | Ile | His | Glu | Tyr | Gly | Gln | Glu | Phe | Arg | Arg | Pro | Cys | Ser | Ser |
| | | | | 530 | | | | | 535 | | | | | 540 |

Ser Pro Glu Asp

<210> 119
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 119
 cgggacagga gaccagaaa ggg 23

<210> 120
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 120
 ggccaagtga tccaaggcat cttc 24

<210> 121
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 121
 ctgcgggacc tgactagatt ctacgacaag gtactttctt tgcattggg 49

<210> 122
 <211> 1778
 <212> DNA
 <213> Homo sapiens

<400> 122

gagatagggg gtctggggtt aagttcctgc tccatctcag gagccctgc 50
tcccaccctt aggaagccac cagactccac ggtgtggggc caatcaggtg 100
gaatcggccc tggcaggtgg ggccacgagc gctggctgag ggaccgagcc 150
ggagagcccc ggagcccccg taaccgcgcg ggggagcgcc caggatgccg 200
cgcggggact cggagcaggt gcgctactgc gcgcgcttct cctacctctg 250
gctcaagttt tcaacttatca tctattccac cgtgttctgg ctgattgggg 300
ccctggctct gtctgtgggc atctatgcag aggttgagcg gcagaaatat 350
aaaacccttg aaagtgcctt cctggctcca gccatcatcc tcatcctcct 400
ggcgctcgtc atgttcatgg tctccttcat tgggtgtgctg gcgtccctcc 450
gtgacaacct gtaccttctc caagcattca tgtacatcct tgggatctgc 500
ctcatcatgg agctcattgg tggcgtgggt gccttgacct tccggaacca 550
gaccattgac ttcctgaacg acaacattcg aagaggaatt gagaactact 600
atgatgatct ggacttcaaa aacatcatgg actttgttca gaaaaagttc 650
aagtgtctgt gcggggagga ctaccgagat tggagcaaga atcagtacca 700
cgactgcagt gccctggac ccctggcctg tggggtgccc tacacctgct 750
gcatcaggaa cacgacagaa gttgtcaaca ccatgtgtgg ctacaaaact 800
atcgacaagg agcgtttcag tgtgcaggat gtcactctacg tgcggggctg 850
caccaacgcc gtgatcatct ggttcatgga caactacacc atcatggcgt 900
gcatcctcct gggcatcctg cttccccagt tcctgggggt gctgctgacg 950
ctgctgtaca tcaccgggt ggaggacatc atcatggagc actctgtcac 1000
tgatgggctc ctggggcccc gtgccaagcc cagcgtggag gcggcaggca 1050
cgggatgctg cttgtgtac cccaattagg gccagcctg ccatggcagc 1100
tccaacaagg accgtctggg atagcacctc tcagtcaaca tcgtggggct 1150
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gctgtgtgtg cctgtgtgta ggtccacgg cctctgcctc ccagggagc 1250
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 gggcaggagg gaagagctgt ccatgcagcc acgcccattg ccagggttggc 1550
 ctctttctcag cctcccaggt gccttgagcc ctcttgcaag ggcggctgct 1600
 tccttgagcc tagttttttt ttacgtgatt ttgttaacat tcattttttt 1650
 gtacagataa caggagtttc tgactaatca aagctggtat ttccccgcat 1700
 gtcttattct tgcccttccc ccaaccagtt tgttaatcaa acaataaaaa 1750
 catgttttgt tttgttttta aaaaaaaaa 1778

<210> 123

<211> 294

<212> PRT

<213> Homo sapiens

<400> 123

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Arg | Gly | Asp | Ser | Glu | Gln | Val | Arg | Tyr | Cys | Ala | Arg | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Tyr | Leu | Trp | Leu | Lys | Phe | Ser | Leu | Ile | Ile | Tyr | Ser | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Trp | Leu | Ile | Gly | Ala | Leu | Val | Leu | Ser | Val | Gly | Ile | Tyr | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Val | Glu | Arg | Gln | Lys | Tyr | Lys | Thr | Leu | Glu | Ser | Ala | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Pro | Ala | Ile | Ile | Leu | Ile | Leu | Leu | Gly | Val | Val | Met | Phe | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Ser | Phe | Ile | Gly | Val | Leu | Ala | Ser | Leu | Arg | Asp | Asn | Leu | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Leu | Gln | Ala | Phe | Met | Tyr | Ile | Leu | Gly | Ile | Cys | Leu | Ile | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Leu | Ile | Gly | Gly | Val | Val | Ala | Leu | Thr | Phe | Arg | Asn | Gln | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ile | Asp | Phe | Leu | Asn | Asp | Asn | Ile | Arg | Arg | Gly | Ile | Glu | Asn | Tyr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Tyr | Asp | Asp | Leu | Asp | Phe | Lys | Asn | Ile | Met | Asp | Phe | Val | Gln | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Phe | Lys | Cys | Cys | Gly | Gly | Glu | Asp | Tyr | Arg | Asp | Trp | Ser | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Gln | Tyr | His | Asp | Cys | Ser | Ala | Pro | Gly | Pro | Leu | Ala | Cys | Gly |

| | 170 | 175 | 180 |
|-----------------|---------------------|---------------------|-----|
| Val Pro Tyr Thr | Cys Cys Ile Arg Asn | Thr Thr Glu Val Val | Asn |
| | 185 | 190 | 195 |
| Thr Met Cys Gly | Tyr Lys Thr Ile Asp | Lys Glu Arg Phe Ser | Val |
| | 200 | 205 | 210 |
| Gln Asp Val Ile | Tyr Val Arg Gly Cys | Thr Asn Ala Val Ile | Ile |
| | 215 | 220 | 225 |
| Trp Phe Met Asp | Asn Tyr Thr Ile Met | Ala Cys Ile Leu Leu | Gly |
| | 230 | 235 | 240 |
| Ile Leu Leu Pro | Gln Phe Leu Gly Val | Leu Leu Thr Leu Leu | Tyr |
| | 245 | 250 | 255 |
| Ile Thr Arg Val | Glu Asp Ile Ile Met | Glu His Ser Val Thr | Asp |
| | 260 | 265 | 270 |
| Gly Leu Leu Gly | Pro Gly Ala Lys Pro | Ser Val Glu Ala Ala | Gly |
| | 275 | 280 | 285 |
| Thr Gly Cys Cys | Leu Cys Tyr Pro Asn | | |
| | 290 | | |

<210> 124

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 124

atcatctatt ccaccgtgtt ctggc 25

<210> 125

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

gacagagtgc tccatgatga tgtcc 25

<210> 126

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

cctgtctgtg ggcatttatg cagaggttga gcggcagaaa tataaaaccc 50

<210> 127

<211> 1636

<212> DNA

<213> Homo sapiens

<400> 127

gaggagcggg ccgaggactc cagcgtgccc aggtctggca tcctgcactt 50

gctgccctct gacacctggg aagatggccg gcccgaggac cttcaccctt 100

ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtccac 150

tgcagttctc atcctcggcc caaaagtcac caaagaaaag ctgacacagg 200

agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250

agtgccatgc gggaaaagcc agccggaggc atccctgtgc tgggcagcct 300

ggtgaacacc gtctgaagc acatcatctg gctgaaggct atcacagcta 350

acatcctcca gctgcagggtg aagccctcgg ccaatgacca ggagctgcta 400

gtcaagatcc ccctggacat ggtggctgga ttcaacacgc ccctgggtcaa 450

gaccatcgtg gagttccaca tgacgactga ggcccaagcc accatccgca 500

tggacaccag tgcaagtggc cccaccgcgc tggtcctcag tgactgtgcc 550

accagccatg ggagcctgcg catccaactg ctgtataagc tctccttcct 600

ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtgc ccatccctgc 650

ccaatctagt gaaaaaccag ctgtgtcccc tgatcgaggc ttccttcaat 700

ggcatgtatg cagacctcct gcagctgggtg aagggtgcca tttccctcag 750

cattgaccgt ctggagtttg accttctgta tcctgccatc aagggtgaca 800

ccattcagct ctacctgggg gccaaagtgt tggactcaca gggaaagggtg 850

accaagtgggt tcaataactc tgcagcttcc ctgacaatgc ccacctgga 900

caacatcccc ttcagcctca tcgtgagtca ggacgtgggtg aaagctgcag 950

tggctgctgt gctctctcca gaagaattca tggtcctggt ggactctgtg 1000

cttcctgaga gtgcccacgc gctgaagtca agcatcgggc tgatcaatga 1050

aaaggctgca gataagctgg gatctacca gatcgtgaag atcctaactc 1100

aggacactcc cgagtttttt atagaccaag gccatgcca ggtggcccaa 1150

ctgatcgtgc tggaagtgtt tccctccagt gaagccctcc gccctttgtt 1200

cacctgggc atcgaagcca gctcgaagc tcagttttac accaaagggtg 1250

accaacttat actcaacttg aataacatca gctctgatcg gatccagctg 1300
 atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350
 cactgagatc atccactcca tcctgctgcc gaaccagaat ggcaaattaa 1400
 gatctggggg cccagtgtca ttgggtgaagg ccttggggatt cgaggcagct 1450
 gagtcctcac tgaccaagga tgcccttggtg cttactccag cctccttggtg 1500
 gaaaccagc tctcctgtct cccagtgaag acttggatgg cagccatcag 1550
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 cctctctgca atcaataaac acttgctgtg gaaaaa 1636

<210> 128
 <211> 484
 <212> PRT
 <213> Homo sapiens

<400> 128
 Met Ala Gly Pro Trp Thr Phe Thr Leu Leu Cys Gly Leu Leu Ala
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 Ala Thr Leu Ile Gln Ala Thr Leu Ser Pro Thr Ala Val Leu Ile
 20 25 30
 Leu Gly Pro Lys Val Ile Lys Glu Lys Leu Thr Gln Glu Leu Lys
 35 40 45
 Asp His Asn Ala Thr Ser Ile Leu Gln Gln Leu Pro Leu Leu Ser
 50 55 60
 Ala Met Arg Glu Lys Pro Ala Gly Gly Ile Pro Val Leu Gly Ser
 65 70 75
 Leu Val Asn Thr Val Leu Lys His Ile Ile Trp Leu Lys Val Ile
 80 85 90
 Thr Ala Asn Ile Leu Gln Leu Gln Val Lys Pro Ser Ala Asn Asp
 95 100 105
 Gln Glu Leu Leu Val Lys Ile Pro Leu Asp Met Val Ala Gly Phe
 110 115 120
 Asn Thr Pro Leu Val Lys Thr Ile Val Glu Phe His Met Thr Thr
 125 130 135
 Glu Ala Gln Ala Thr Ile Arg Met Asp Thr Ser Ala Ser Gly Pro
 140 145 150
 Thr Arg Leu Val Leu Ser Asp Cys Ala Thr Ser His Gly Ser Leu
 155 160 165
 Arg Ile Gln Leu Leu Tyr Lys Leu Ser Phe Leu Val Asn Ala Leu

| | 170 | | 175 | | 180 |
|-----------------|---------------------|-------------------------|-----|--|-----|
| Ala Lys Gln Val | Met Asn Leu Leu Val | Pro Ser Leu Pro Asn Leu | | | |
| | 185 | | 190 | | 195 |
| Val Lys Asn Gln | Leu Cys Pro Val Ile | Glu Ala Ser Phe Asn Gly | | | |
| | 200 | | 205 | | 210 |
| Met Tyr Ala Asp | Leu Leu Gln Leu Val | Lys Val Pro Ile Ser Leu | | | |
| | 215 | | 220 | | 225 |
| Ser Ile Asp Arg | Leu Glu Phe Asp Leu | Leu Tyr Pro Ala Ile Lys | | | |
| | 230 | | 235 | | 240 |
| Gly Asp Thr Ile | Gln Leu Tyr Leu Gly | Ala Lys Leu Leu Asp Ser | | | |
| | 245 | | 250 | | 255 |
| Gln Gly Lys Val | Thr Lys Trp Phe Asn | Asn Ser Ala Ala Ser Leu | | | |
| | 260 | | 265 | | 270 |
| Thr Met Pro Thr | Leu Asp Asn Ile Pro | Phe Ser Leu Ile Val Ser | | | |
| | 275 | | 280 | | 285 |
| Gln Asp Val Val | Lys Ala Ala Val Ala | Ala Val Leu Ser Pro Glu | | | |
| | 290 | | 295 | | 300 |
| Glu Phe Met Val | Leu Leu Asp Ser Val | Leu Pro Glu Ser Ala His | | | |
| | 305 | | 310 | | 315 |
| Arg Leu Lys Ser | Ser Ile Gly Leu Ile | Asn Glu Lys Ala Ala Asp | | | |
| | 320 | | 325 | | 330 |
| Lys Leu Gly Ser | Thr Gln Ile Val Lys | Ile Leu Thr Gln Asp Thr | | | |
| | 335 | | 340 | | 345 |
| Pro Glu Phe Phe | Ile Asp Gln Gly His | Ala Lys Val Ala Gln Leu | | | |
| | 350 | | 355 | | 360 |
| Ile Val Leu Glu | Val Phe Pro Ser Ser | Glu Ala Leu Arg Pro Leu | | | |
| | 365 | | 370 | | 375 |
| Phe Thr Leu Gly | Ile Glu Ala Ser Ser | Glu Ala Gln Phe Tyr Thr | | | |
| | 380 | | 385 | | 390 |
| Lys Gly Asp Gln | Leu Ile Leu Asn Leu | Asn Asn Ile Ser Ser Asp | | | |
| | 395 | | 400 | | 405 |
| Arg Ile Gln Leu | Met Asn Ser Gly Ile | Gly Trp Phe Gln Pro Asp | | | |
| | 410 | | 415 | | 420 |
| Val Leu Lys Asn | Ile Ile Thr Glu Ile | Ile His Ser Ile Leu Leu | | | |
| | 425 | | 430 | | 435 |
| Pro Asn Gln Asn | Gly Lys Leu Arg Ser | Gly Val Pro Val Ser Leu | | | |
| | 440 | | 445 | | 450 |
| Val Lys Ala Leu | Gly Phe Glu Ala Ala | Glu Ser Ser Leu Thr Lys | | | |

| | | | |
|---|-----|-----|-----|
| | 455 | 460 | 465 |
| Asp Ala Leu Val Leu Thr Pro Ala Ser Leu Trp Lys Pro Ser Ser | | | |
| | 470 | 475 | 480 |
| Pro Val Ser Gln | | | |

<210> 129
 <211> 2213
 <212> DNA
 <213> Homo sapiens

<400> 129
 gagcgaacat ggcagcgcgt tggcgggtttt ggtgtgtctc tgtgaccatg 50
 gtggtggcgc tgctcatcgt ttgcgacgtt ccctcagcct ctgccccaaag 100
 aaagaaggag atggtgttat ctgaaaaggt tagtcagctg atggaatgga 150
 ctaacaaaag acctgtaata agaatgaatg gagacaagtt ccgtcgcctt 200
 gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcaactgctct 250
 ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300
 agatcctggc aaactcctgg cgatactcca gtgcattcac caacaggata 350
 ttttttgcca tgggtggattt tgatgaaggc tctgatgtat ttcagatgct 400
 aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaaac 450
 ccaaacgggg tgatacatat gagttacagg tgcgggggttt ttcagctgag 500
 cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550
 tagaccccca aattatgctg gtccccttat gttgggattg cttttggctg 600
 ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctcttt 650
 aataaaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700
 atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750
 atccccacac gggacatgtg aattatatcc atggaagcag tcaagcccag 800
 tttgtagctg aaacacacat tgttcttctg tttaatggtg gagttacctt 850
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<400> 130

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| Met | Ala | Ala | Arg | Trp | Arg | Phe | Trp | Cys | Val | Ser | Val | Thr | Met | Val |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Val Ala Leu Leu Ile Val Cys Asp Val Pro Ser Ala Ser Ala Gln

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Arg | Lys | Lys | Glu | Met | Val | Leu | Ser | Glu | Lys | Val | Ser | Gln | Leu | Met | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Glu | Trp | Thr | Asn | Lys | Arg | Pro | Val | Ile | Arg | Met | Asn | Gly | Asp | Lys | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Phe | Arg | Arg | Leu | Val | Lys | Ala | Pro | Pro | Arg | Asn | Tyr | Ser | Val | Ile | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Val | Met | Phe | Thr | Ala | Leu | Gln | Leu | His | Arg | Gln | Cys | Val | Val | Cys | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Lys | Gln | Ala | Asp | Glu | Glu | Phe | Gln | Ile | Leu | Ala | Asn | Ser | Trp | Arg | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Tyr | Ser | Ser | Ala | Phe | Thr | Asn | Arg | Ile | Phe | Phe | Ala | Met | Val | Asp | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Phe | Asp | Glu | Gly | Ser | Asp | Val | Phe | Gln | Met | Leu | Asn | Met | Asn | Ser | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ala | Pro | Thr | Phe | Ile | Asn | Phe | Pro | Ala | Lys | Gly | Lys | Pro | Lys | Arg | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Gly | Asp | Thr | Tyr | Glu | Leu | Gln | Val | Arg | Gly | Phe | Ser | Ala | Glu | Gln | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Ile | Ala | Arg | Trp | Ile | Ala | Asp | Arg | Thr | Asp | Val | Asn | Ile | Arg | Val | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ile | Arg | Pro | Pro | Asn | Tyr | Ala | Gly | Pro | Leu | Met | Leu | Gly | Leu | Leu | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Ala | Val | Ile | Gly | Gly | Leu | Val | Tyr | Leu | Arg | Arg | Ser | Asn | Met | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Glu | Phe | Leu | Phe | Asn | Lys | Thr | Gly | Trp | Ala | Phe | Ala | Ala | Leu | Cys | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Phe | Val | Leu | Ala | Met | Thr | Ser | Gly | Gln | Met | Trp | Asn | His | Ile | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gly | Pro | Pro | Tyr | Ala | His | Lys | Asn | Pro | His | Thr | Gly | His | Val | Asn | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Tyr | Ile | His | Gly | Ser | Ser | Gln | Ala | Gln | Phe | Val | Ala | Glu | Thr | His | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ile | Val | Leu | Leu | Phe | Asn | Gly | Gly | Val | Thr | Leu | Gly | Met | Val | Leu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Leu | Cys | Glu | Ala | Ala | Thr | Ser | Asp | Met | Asp | Ile | Gly | Lys | Arg | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ile | Met | Cys | Val | Ala | Gly | Ile | Gly | Leu | Val | Val | Leu | Phe | Phe | Ser | | | | | |

| | | | | | |
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| | 305 | | 310 | | 315 |
| Trp Met Leu Ser Ile Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr | | | | | |
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<400> 132

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| Met | Leu | Leu | Leu | Trp | Val | Ser | Val | Val | Ala | Ala | Leu | Ala | Leu | Ala | 1 | 5 | 10 | 15 |
| Val | Leu | Ala | Pro | Gly | Ala | Gly | Glu | Gln | Arg | Arg | Arg | Ala | Ala | Lys | 20 | 25 | 30 | |
| Ala | Pro | Asn | Val | Val | Leu | Val | Val | Ser | Asp | Ser | Phe | Asp | Gly | Arg | 35 | 40 | 45 | |
| Leu | Thr | Phe | His | Pro | Gly | Ser | Gln | Val | Val | Lys | Leu | Pro | Phe | Ile | 50 | 55 | 60 | |
| Asn | Phe | Met | Lys | Thr | Arg | Gly | Thr | Ser | Phe | Leu | Asn | Ala | Tyr | Thr | 65 | 70 | 75 | |
| Asn | Ser | Pro | Ile | Cys | Cys | Pro | Ser | Arg | Ala | Ala | Met | Trp | Ser | Gly | 80 | 85 | 90 | |
| Leu | Phe | Thr | His | Leu | Thr | Glu | Ser | Trp | Asn | Asn | Phe | Lys | Gly | Leu | 95 | 100 | 105 | |
| Asp | Pro | Asn | Tyr | Thr | Thr | Trp | Met | Asp | Val | Met | Glu | Arg | His | Gly | 110 | 115 | 120 | |
| Tyr | Arg | Thr | Gln | Lys | Phe | Gly | Lys | Leu | Asp | Tyr | Thr | Ser | Gly | His | 125 | 130 | 135 | |
| His | Ser | Ile | Ser | Asn | Arg | Val | Glu | Ala | Trp | Thr | Arg | Asp | Val | Ala | 140 | 145 | 150 | |
| Phe | Leu | Leu | Arg | Gln | Glu | Gly | Arg | Pro | Met | Val | Asn | Leu | Ile | Arg | 155 | 160 | 165 | |
| Asn | Arg | Thr | Lys | Val | Arg | Val | Met | Glu | Arg | Asp | Trp | Gln | Asn | Thr | 170 | 175 | 180 | |
| Asp | Lys | Ala | Val | Asn | Trp | Leu | Arg | Lys | Glu | Ala | Ile | Asn | Tyr | Thr | 185 | 190 | 195 | |
| Glu | Pro | Phe | Val | Ile | Tyr | Leu | Gly | Leu | Asn | Leu | Pro | His | Pro | Tyr | 200 | 205 | 210 | |
| Pro | Ser | Pro | Ser | Ser | Gly | Glu | Asn | Phe | Gly | Ser | Ser | Thr | Phe | His | 215 | 220 | 225 | |
| Thr | Ser | Leu | Tyr | Trp | Leu | Glu | Lys | Val | Ser | His | Asp | Ala | Ile | Lys | 230 | 235 | 240 | |
| Ile | Pro | Lys | Trp | Ser | Pro | Leu | Ser | Glu | Met | His | Pro | Val | Asp | Tyr | 245 | 250 | 255 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Ser | Ser | Tyr | Thr | Lys | Asn | Cys | Thr | Gly | Arg | Phe | Thr | Lys | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Ile | Lys | Asn | Ile | Arg | Ala | Phe | Tyr | Tyr | Ala | Met | Cys | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Asp | Ala | Met | Leu | Gly | Glu | Ile | Ile | Leu | Ala | Leu | His | Gln | Leu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Leu | Leu | Gln | Lys | Thr | Ile | Val | Ile | Tyr | Ser | Ser | Asp | His | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Leu | Ala | Met | Glu | His | Arg | Gln | Phe | Tyr | Lys | Met | Ser | Met | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Ser | Ala | His | Val | Pro | Leu | Leu | Met | Met | Gly | Pro | Gly | Ile | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Lys | Ala | Gly | Leu | Gln | Val | Ser | Asn | Val | Val | Ser | Leu | Val | Asp | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Pro | Thr | Met | Leu | Asp | Ile | Ala | Gly | Ile | Pro | Leu | Pro | Gln | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Ser | Gly | Tyr | Ser | Leu | Leu | Pro | Leu | Ser | Ser | Glu | Thr | Phe | Lys | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Asn | Glu | His | Lys | Val | Lys | Asn | Leu | His | Pro | Pro | Trp | Ile | Leu | Ser | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Glu | Phe | His | Gly | Cys | Asn | Val | Asn | Ala | Ser | Thr | Tyr | Met | Leu | Arg | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Thr | Asn | His | Trp | Lys | Tyr | Ile | Ala | Tyr | Ser | Asp | Gly | Ala | Ser | Ile | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Pro | Gln | Leu | Phe | Asp | Leu | Ser | Ser | Asp | Pro | Asp | Glu | Leu | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Asn | Val | Ala | Val | Lys | Phe | Pro | Glu | Ile | Thr | Tyr | Ser | Leu | Asp | Gln | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Lys | Leu | His | Ser | Ile | Ile | Asn | Tyr | Pro | Lys | Val | Ser | Ala | Ser | Val | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| His | Gln | Tyr | Asn | Lys | Glu | Gln | Phe | Ile | Lys | Trp | Lys | Gln | Ser | Ile | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Gly | Gln | Asn | Tyr | Ser | Asn | Val | Ile | Ala | Asn | Leu | Arg | Trp | His | Gln | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Asp | Trp | Gln | Lys | Glu | Pro | Arg | Lys | Tyr | Glu | Asn | Ala | Ile | Asp | Gln | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Trp | Leu | Lys | Thr | His | Met | Asn | Pro | Arg | Ala | Val | | | | | |
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<400> 134

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| Met | Ala | Ser | Leu | Gly | Leu | Gln | Leu | Val | Gly | Tyr | Ile | Leu | Gly | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Leu | Leu | Gly | Thr | Leu | Val | Ala | Met | Leu | Leu | Pro | Ser | Trp | 20 | 25 | 30 | |
| Lys | Thr | Ser | Ser | Tyr | Val | Gly | Ala | Ser | Ile | Val | Thr | Ala | Val | Gly | 35 | 40 | 45 | |
| Phe | Ser | Lys | Gly | Leu | Trp | Met | Glu | Cys | Ala | Thr | His | Ser | Thr | Gly | 50 | 55 | 60 | |
| Ile | Thr | Gln | Cys | Asp | Ile | Tyr | Ser | Thr | Leu | Leu | Gly | Leu | Pro | Ala | 65 | 70 | 75 | |
| Asp | Ile | Gln | Ala | Ala | Gln | Ala | Met | Met | Val | Thr | Ser | Ser | Ala | Ile | 80 | 85 | 90 | |
| Ser | Ser | Leu | Ala | Cys | Ile | Ile | Ser | Val | Val | Gly | Met | Arg | Cys | Thr | 95 | 100 | 105 | |
| Val | Phe | Cys | Gln | Glu | Ser | Arg | Ala | Lys | Asp | Arg | Val | Ala | Val | Ala | 110 | 115 | 120 | |
| Gly | Gly | Val | Phe | Phe | Ile | Leu | Gly | Gly | Leu | Leu | Gly | Phe | Ile | Pro | 125 | 130 | 135 | |
| Val | Ala | Trp | Asn | Leu | His | Gly | Ile | Leu | Arg | Asp | Phe | Tyr | Ser | Pro | 140 | 145 | 150 | |
| Leu | Val | Pro | Asp | Ser | Met | Lys | Phe | Glu | Ile | Gly | Glu | Ala | Leu | Tyr | 155 | 160 | 165 | |
| Leu | Gly | Ile | Ile | Ser | Ser | Leu | Phe | Ser | Leu | Ile | Ala | Gly | Ile | Ile | 170 | 175 | 180 | |
| Leu | Cys | Phe | Ser | Cys | Ser | Ser | Gln | Arg | Asn | Arg | Ser | Asn | Tyr | Tyr | 185 | 190 | 195 | |
| Asp | Ala | Tyr | Gln | Ala | Gln | Pro | Leu | Ala | Thr | Arg | Ser | Ser | Pro | Arg | 200 | 205 | 210 | |

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Leu Thr Gly Tyr Val
 230

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 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 136
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 35 40 45
 Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu
 50 55 60
 Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Ser | Arg | Leu | Leu | Cys | Ser | His | Gly | Ala | Pro | Val | Ala | Pro | Met | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Thr | Pro | Tyr | Leu | Met | Leu | Cys | Gln | Pro | His | Lys | Arg | Cys | Gly | Asp | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Phe | Tyr | Asp | Pro | Leu | Gln | His | Cys | Cys | Tyr | Asp | Asp | Ala | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Pro | Leu | Ala | Arg | Thr | Gln | Thr | Cys | Gly | Asn | Cys | Thr | Phe | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Cys | Phe | Glu | Gln | Cys | Cys | Pro | Trp | Thr | Phe | Met | Val | Lys | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Asn | Gln | Asn | Cys | Asp | Ser | Ala | Arg | Thr | Ser | Asp | Asp | Arg | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | Arg | Ser | Val | Ser | | | | | | | | | | | |
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<400> 140

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| Ser | Leu | Leu | Phe | Ala | Leu | Phe | Leu | Ala | Ala | Ser | Leu | Gly | Pro | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ala | Phe | Lys | Val | Ala | Thr | Pro | Tyr | Ser | Leu | Tyr | Val | Cys | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Gly | Gln | Asn | Val | Thr | Leu | Thr | Cys | Arg | Leu | Leu | Gly | Pro | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Lys | Gly | His | Asp | Val | Thr | Phe | Tyr | Lys | Thr | Trp | Tyr | Arg | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Arg | Gly | Glu | Val | Gln | Thr | Cys | Ser | Glu | Arg | Arg | Pro | Ile | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Leu | Thr | Phe | Gln | Asp | Leu | His | Leu | His | His | Gly | Gly | His | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Ala | Asn | Thr | Ser | His | Asp | Leu | Ala | Gln | Arg | His | Gly | Leu | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Ala | Ser | Asp | His | His | Gly | Asn | Phe | Ser | Ile | Thr | Met | Arg | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Thr | Leu | Leu | Asp | Ser | Gly | Leu | Tyr | Cys | Cys | Leu | Val | Val | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Arg | His | His | His | Ser | Glu | His | Arg | Val | His | Gly | Ala | Met | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gln | Val | Gln | Thr | Gly | Lys | Asp | Ala | Pro | Ser | Asn | Cys | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Tyr | Pro | Ser | Ser | Ser | Gln | Asp | Ser | Glu | Asn | Ile | Thr | Ala | Ala | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Ala | Thr | Gly | Ala | Cys | Ile | Val | Gly | Ile | Leu | Cys | Leu | Pro | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ile | Leu | Leu | Leu | Val | Tyr | Lys | Gln | Arg | Gln | Ala | Ala | Ser | Asn | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Ala | Gln | Glu | Leu | Val | Arg | Met | Asp | Ser | Asn | Ile | Gln | Gly | Ile |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Glu | Asn | Pro | Gly | Phe | Glu | Ala | Ser | Pro | Pro | Ala | Gln | Gly | Ile | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Ala | Lys | Val | Arg | His | Pro | Leu | Ser | Tyr | Val | Ala | Gln | Arg | Gln |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Pro | Ser | Glu | Ser | Gly | Arg | His | Leu | Leu | Ser | Glu | Pro | Ser | Thr | Pro |

| | | | | | |
|---|-----|--|-----|--|-----|
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| Leu Ser Pro Pro Gly Pro Gly Asp Val Phe Phe Pro Ser Leu Asp | | | | | |
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| Pro Val Pro Asp Ser Pro Asn Phe Glu Val Ile | | | | | |
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<212> PRT

<213> Homo sapiens

<400> 142

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| Met | Val | Pro | Glu | Val | Arg | Val | Leu | Ser | Ser | Leu | Leu | Gly | Leu | Ala |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Leu | Leu | Trp | Phe | Pro | Leu | Asp | Ser | His | Ala | Arg | Ala | Arg | Pro | Asp |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Met | Phe | Cys | Leu | Phe | His | Gly | Lys | Arg | Tyr | Ser | Pro | Gly | Glu | Ser |
| | | | | 35 | | | | 40 | | | | | 45 | |
| Trp | His | Pro | Tyr | Leu | Glu | Pro | Gln | Gly | Leu | Met | Tyr | Cys | Leu | Arg |
| | | | | 50 | | | | 55 | | | | | 60 | |
| Cys | Thr | Cys | Ser | Glu | Gly | Ala | His | Val | Ser | Cys | Tyr | Arg | Leu | His |
| | | | | 65 | | | | 70 | | | | | 75 | |
| Cys | Pro | Pro | Val | His | Cys | Pro | Gln | Pro | Val | Thr | Glu | Pro | Gln | Gln |
| | | | | 80 | | | | 85 | | | | | 90 | |
| Cys | Cys | Pro | Lys | Cys | Val | Glu | Pro | His | Thr | Pro | Ser | Gly | Leu | Arg |
| | | | | 95 | | | | 100 | | | | | 105 | |
| Ala | Pro | Pro | Lys | Ser | Cys | Gln | His | Asn | Gly | Thr | Met | Tyr | Gln | His |
| | | | | 110 | | | | 115 | | | | | 120 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Glu | Ile | Phe | Ser | Ala | His | Glu | Leu | Phe | Pro | Ser | Arg | Leu | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Gln | Cys | Val | Leu | Cys | Ser | Cys | Thr | Glu | Gly | Gln | Ile | Tyr | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Leu | Thr | Thr | Cys | Pro | Glu | Pro | Gly | Cys | Pro | Ala | Pro | Leu | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Pro | Asp | Ser | Cys | Cys | Gln | Ala | Cys | Lys | Asp | Glu | Ala | Ser | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Ser | Asp | Glu | Glu | Asp | Ser | Val | Gln | Ser | Leu | His | Gly | Val | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| His | Pro | Gln | Asp | Pro | Cys | Ser | Ser | Asp | Ala | Gly | Arg | Lys | Arg | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Gly | Thr | Pro | Ala | Pro | Thr | Gly | Leu | Ser | Ala | Pro | Leu | Ser | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Pro | Arg | His | Phe | Arg | Pro | Lys | Gly | Ala | Gly | Ser | Thr | Thr | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Ile | Val | Leu | Lys | Glu | Lys | His | Lys | Lys | Ala | Cys | Val | His | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Lys | Thr | Tyr | Ser | His | Gly | Glu | Val | Trp | His | Pro | Ala | Phe | Arg | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Phe | Gly | Pro | Leu | Pro | Cys | Ile | Leu | Cys | Thr | Cys | Glu | Asp | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Arg | Gln | Asp | Cys | Gln | Arg | Val | Thr | Cys | Pro | Thr | Glu | Tyr | Pro | Cys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Arg | His | Pro | Glu | Lys | Val | Ala | Gly | Lys | Cys | Cys | Lys | Ile | Cys | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Asp | Lys | Ala | Asp | Pro | Gly | His | Ser | Glu | Ile | Ser | Ser | Thr | Arg | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Cys | Pro | Lys | Ala | Pro | Gly | Arg | Val | Leu | Val | His | Thr | Ser | Val | Ser | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Ser | Pro | Asp | Asn | Leu | Arg | Arg | Phe | Ala | Leu | Glu | His | Glu | Ala | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Ser | Asp | Leu | Val | Glu | Ile | Tyr | Leu | Trp | Lys | Leu | Val | Lys | Asp | Glu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Glu | Thr | Glu | Ala | Gln | Arg | Gly | Glu | Val | Pro | Gly | Pro | Arg | Pro | His | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ser | Gln | Asn | Leu | Pro | Leu | Asp | Ser | Asp | Gln | Glu | Ser | Gln | Glu | Ala | |
| | | | | 395 | | | | | 400 | | | | | 405 | |

Arg Leu Pro Glu Arg Gly Thr Ala Leu Pro Thr Ala Arg Trp Pro
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Pro Arg Arg Ser Leu Glu Arg Leu Pro Ser Pro Asp Pro Gly Ala
425 430 435

Glu Gly His Gly Gln Ser Arg Gln Ser Asp Gln Asp Ile Thr Lys
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Thr

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<212> DNA

<213> Homo sapiens

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<211> 93

<212> PRT

<213> Homo sapiens

<400> 144

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Ala Gly Ala Gly Val Gly Tyr Ala Leu Leu Val Ile Val Thr Pro
20 25 30

| | | | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Arg | Arg | Lys | Gln | Glu | Met | Leu | Lys | Glu | Met | Pro | Leu | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Pro | Arg | Ser | Arg | Glu | Glu | Ala | Ala | Arg | Thr | Gln | Gln | Leu | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Ala | Thr | Leu | Gln | Glu | Ala | Ala | Thr | Thr | Gln | Glu | Asn | Val | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Trp | Arg | Lys | Asn | Trp | Met | Val | Gly | Gly | Glu | Gly | Gly | Ala | Ser | Gly |
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<212> PRT

<213> Homo sapiens

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Glu Arg Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln
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Asp Gln Ser Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn

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| Lys | Met | Leu | Pro | Leu | Leu | Glu | Val | Ala | Glu | Lys | Glu | Arg | Glu | Ala | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Leu | Arg | Thr | Glu | Ala | Asp | Thr | Ile | Ser | Gly | Arg | Val | Asp | Arg | Leu | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Glu | Arg | Glu | Val | Asp | Tyr | Leu | Glu | Thr | Gln | Asn | Pro | Ala | Leu | Pro | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Cys | Val | Glu | Phe | Asp | Glu | Lys | Val | Thr | Gly | Gly | Pro | Gly | Thr | Lys | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gly | Lys | Gly | Arg | Arg | Asn | Glu | Lys | Tyr | Asp | Met | Val | Thr | Asp | Cys | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Gly | Tyr | Thr | Ile | Ser | Gln | Val | Arg | Ser | Met | Lys | Ile | Leu | Lys | Arg | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Phe | Gly | Gly | Pro | Ala | Gly | Leu | Trp | Thr | Lys | Asp | Pro | Leu | Gly | Gln | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Thr | Glu | Lys | Ile | Tyr | Val | Leu | Asp | Gly | Thr | Gln | Asn | Asp | Thr | Ala | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Phe | Val | Phe | Pro | Arg | Leu | Arg | Asp | Phe | Thr | Leu | Ala | Met | Ala | Ala | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Arg | Lys | Ala | Ser | Arg | Val | Arg | Val | Pro | Phe | Pro | Trp | Val | Gly | Thr | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Gly | Gln | Leu | Val | Tyr | Gly | Gly | Phe | Leu | Tyr | Phe | Ala | Arg | Arg | Pro | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Pro | Gly | Arg | Pro | Gly | Gly | Gly | Gly | Glu | Met | Glu | Asn | Thr | Leu | Gln | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Ile | Lys | Phe | His | Leu | Ala | Asn | Arg | Thr | Val | Val | Asp | Ser | Ser | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Val | Phe | Pro | Ala | Glu | Gly | Leu | Ile | Pro | Pro | Tyr | Gly | Leu | Thr | Ala | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Asp | Thr | Tyr | Ile | Asp | Leu | Val | Ala | Asp | Glu | Glu | Gly | Leu | Trp | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Val | Tyr | Ala | Thr | Arg | Glu | Asp | Asp | Arg | His | Leu | Cys | Leu | Ala | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Asp | Pro | Gln | Thr | Leu | Asp | Thr | Glu | Gln | Gln | Trp | Asp | Thr | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Cys | Pro | Arg | Glu | Asn | Ala | Glu | Ala | Ala | Phe | Val | Ile | Cys | Gly | Thr | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Leu | Tyr | Val | Val | Tyr | Asn | Thr | Arg | Pro | Ala | Ser | Arg | Ala | Arg | Ile | | | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 335 | | 340 | | 345 |
| Gln Cys Ser Phe Asp Ala Ser Gly Thr Leu Thr Pro Glu Arg Ala | | | | | |
| | 350 | | 355 | | 360 |
| Ala Leu Pro Tyr Phe Pro Arg Arg Tyr Gly Ala His Ala Ser Leu | | | | | |
| | 365 | | 370 | | 375 |
| Arg Tyr Asn Pro Arg Glu Arg Gln Leu Tyr Ala Trp Asp Asp Gly | | | | | |
| | 380 | | 385 | | 390 |
| Tyr Gln Ile Val Tyr Lys Leu Glu Met Arg Lys Lys Glu Glu Glu | | | | | |
| | 395 | | 400 | | 405 |

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aa 2052

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<211> 500

<212> PRT

<213> Homo sapiens

<400> 148

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| | 20 | 25 | 30 |
| Leu Val Gly Glu | Asp Ala Ala Phe Ser | Cys Phe Leu Ser | Pro Lys |
| | 35 | 40 | 45 |
| Thr Asn Ala Glu | Ala Met Glu Val Arg | Phe Phe Arg Gly | Gln Phe |
| | 50 | 55 | 60 |
| Ser Ser Val Val | His Leu Tyr Arg Asp | Gly Lys Asp Gln | Pro Phe |
| | 65 | 70 | 75 |
| Met Gln Met Pro | Gln Tyr Gln Gly Arg | Thr Lys Leu Val | Lys Asp |
| | 80 | 85 | 90 |
| Ser Ile Ala Glu | Gly Arg Ile Ser Leu | Arg Leu Glu Asn | Ile Thr |
| | 95 | 100 | 105 |
| Val Leu Asp Ala | Gly Leu Tyr Gly Cys | Arg Ile Ser Ser | Gln Ser |
| | 110 | 115 | 120 |
| Tyr Tyr Gln Lys | Ala Ile Trp Glu Leu | Gln Val Ser Ala | Leu Gly |
| | 125 | 130 | 135 |
| Ser Val Pro Leu | Ile Ser Ile Thr Gly | Tyr Val Asp Arg | Asp Ile |
| | 140 | 145 | 150 |
| Gln Leu Leu Cys | Gln Ser Ser Gly Trp | Phe Pro Arg Pro | Thr Ala |
| | 155 | 160 | 165 |
| Lys Trp Lys Gly | Pro Gln Gly Gln Asp | Leu Ser Thr Asp | Ser Arg |
| | 170 | 175 | 180 |
| Thr Asn Arg Asp | Met His Gly Leu Phe | Asp Val Glu Ile | Ser Leu |
| | 185 | 190 | 195 |
| Thr Val Gln Glu | Asn Ala Gly Ser Ile | Ser Cys Ser Met | Arg His |
| | 200 | 205 | 210 |
| Ala His Leu Ser | Arg Glu Val Glu Ser | Arg Val Gln Ile | Gly Asp |
| | 215 | 220 | 225 |
| Thr Phe Phe Glu | Pro Ile Ser Trp His | Leu Ala Thr Lys | Val Leu |
| | 230 | 235 | 240 |
| Gly Ile Leu Cys | Cys Gly Leu Phe Phe | Gly Ile Val Gly | Leu Lys |
| | 245 | 250 | 255 |
| Ile Phe Phe Ser | Lys Phe Gln Trp Lys | Ile Gln Ala Glu | Leu Asp |
| | 260 | 265 | 270 |
| Trp Arg Arg Lys | His Gly Gln Ala Glu | Leu Arg Asp Ala | Arg Lys |
| | 275 | 280 | 285 |
| His Ala Val Glu | Val Thr Leu Asp | Pro Glu Thr Ala | His Pro Lys |

| 290 | | | | | | | | | | 295 | | | | | 300 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Cys | Val | Ser | Asp | Leu | Lys | Thr | Val | Thr | His | Arg | Lys | Ala | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Gln | Glu | Val | Pro | His | Ser | Glu | Lys | Arg | Phe | Thr | Arg | Lys | Ser | Val | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Val | Ala | Ser | Gln | Ser | Phe | Gln | Ala | Gly | Lys | His | Tyr | Trp | Glu | Val | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Asp | Gly | Gly | His | Asn | Lys | Arg | Trp | Arg | Val | Gly | Val | Cys | Arg | Asp | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Asp | Val | Asp | Arg | Arg | Lys | Glu | Tyr | Val | Thr | Leu | Ser | Pro | Asp | His | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Gly | Tyr | Trp | Val | Leu | Arg | Leu | Asn | Gly | Glu | His | Leu | Tyr | Phe | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Leu | Asn | Pro | Arg | Phe | Ile | Ser | Val | Phe | Pro | Arg | Thr | Pro | Pro | Thr | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Lys | Ile | Gly | Val | Phe | Leu | Asp | Tyr | Glu | Cys | Gly | Thr | Ile | Ser | Phe | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Phe | Asn | Ile | Asn | Asp | Gln | Ser | Leu | Ile | Tyr | Thr | Leu | Thr | Cys | Arg | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Phe | Glu | Gly | Leu | Leu | Arg | Pro | Tyr | Ile | Glu | Tyr | Pro | Ser | Tyr | Asn | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Glu | Gln | Asn | Gly | Thr | Pro | Ile | Val | Ile | Cys | Pro | Val | Thr | Gln | Glu | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Ser | Glu | Lys | Glu | Ala | Ser | Trp | Gln | Arg | Ala | Ser | Ala | Ile | Pro | Glu | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Thr | Ser | Asn | Ser | Glu | Ser | Ser | Ser | Gln | Ala | Thr | Thr | Pro | Phe | Leu | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Pro | Arg | Gly | Glu | Met | | | | | | | | | | | | | | | |
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<210> 150

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ggaactgacc cagtgtgac acc 23

<210> 151
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aatgaatggc ggagccgagc gcgccatgag gagcctgccg agcctgggcg 150
gcctcgccct gttgtgtgac gccgccgccg ccgccgccgt cgcctcagcc 200
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<212> PRT

<213> Homo sapiens

<400> 153

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| Met | Arg | Ser | Leu | Pro | Ser | Leu | Gly | Gly | Leu | Ala | Leu | Leu | Cys | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Ala | Ala | Ala | Ala | Val | Ala | Ser | Ala | Ala | Ser | Ala | Gly | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Gly | Gly | Gly | Gly | Ala | Ala | Gly | Gln | Val | Asp | Ala | Ser | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Gly | Leu | Arg | Gly | Glu | Pro | Ser | His | Pro | Phe | Pro | Arg | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Pro | Thr | Ala | Gln | Ala | Pro | Arg | Thr | Gly | Pro | Pro | Arg | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | His | Arg | Pro | Leu | Ala | Ala | Thr | Ser | Pro | Ala | Gln | Ser | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Thr | Thr | Pro | Leu | Trp | Ala | Thr | Ala | Gly | Pro | Ser | Ser | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gln | Ala | Pro | Leu | Gly | Pro | Ser | Pro | Thr | Thr | Pro | Pro | Ala | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Thr | Ser | Thr | Thr | Ser | Gln | Ala | Pro | Thr | Arg | Pro | Ala | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Thr | Leu | Ser | Thr | Thr | Thr | Gly | Pro | Ala | Pro | Thr | Thr | Pro | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Thr | Val | Pro | Ala | Pro | Thr | Thr | Pro | Arg | Thr | Pro | Thr | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Pro | Ser | Ser | Ser | Asn | Ser | Ser | Val | Leu | Pro | Thr | Pro | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Glu | Ala | Pro | Ser | Ser | Pro | Pro | Pro | Glu | Tyr | Val | Cys | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Val | Val | Gly | Ser | Leu | Asn | Val | Asn | Arg | Cys | Asn | Gln | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Gln | Cys | Glu | Cys | Arg | Pro | Gly | Tyr | Gln | Gly | Leu | His | Cys |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Thr | Cys | Lys | Glu | Gly | Phe | Tyr | Leu | Asn | Tyr | Thr | Ser | Gly | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

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245 250 255

Cys Asn Arg

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<210> 156
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<210> 158

<211> 163

<212> PRT

<213> Homo sapiens

<400> 158

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Gly | Leu | Leu | Leu | Ala | Ala | Phe | Leu | Ala | Leu | Val | Ser | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Ala | Gln | Ala | Val | Trp | Leu | Gly | Arg | Leu | Asp | Pro | Glu | Gln |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gly | Pro | Trp | Tyr | Val | Leu | Ala | Val | Ala | Ser | Arg | Glu | Lys |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Ala | Met | Glu | Lys | Asp | Met | Lys | Asn | Val | Val | Gly | Val | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Leu | Thr | Pro | Glu | Asn | Asn | Leu | Arg | Thr | Leu | Ser | Ser | Gln |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Leu | Gly | Gly | Cys | Asp | Gln | Ser | Val | Met | Asp | Leu | Ile | Lys |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Ser | Gly | Trp | Val | Phe | Glu | Asn | Pro | Ser | Ile | Gly | Val | Leu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Trp | Val | Leu | Ala | Thr | Asn | Phe | Arg | Asp | Tyr | Ala | Ile | Ile |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Thr | Gln | Leu | Glu | Phe | Gly | Asp | Glu | Pro | Phe | Asn | Thr | Val | Glu |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Ser | Leu | Thr | Glu | Thr | Ala | Ser | Gln | Glu | Ala | Met | Gly | Leu |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Thr | Lys | Trp | Ser | Arg | Ser | Leu | Gly | Phe | Leu | Ser | Gln |
| | | | 155 | | | | | | 160 | | | |

<210> 159

<211> 1665
<212> DNA
<213> Homo sapiens

<400> 159

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gtaaactgct gacgatgcag agttccgtga cgggtgcagga aggcctgtgt 150
gtccatgtgc cctgctcctt ctctacccc tcgcatggct ggatttacc 200
tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250
aggatgctcc agtggccaca aacaaccag ctcgggcagt gtgggaggag 300
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gtgagcaggg gacaccccct atgatctcct ggataggga ctccgtgtcc 600
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gccccaggac catggcacca gcctcacctg tcaggtgacc ttccctgggg 700
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cagaacttga ccatgactgt cttccaagga gacggcacag tatccacagt 800
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cctgactgaa ccttgggcag aagacagtcc ccagaccag cctccccag 1300
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 atgaattatg tgcagagtga aaagcacaca ggctttagag tcaaagtatc 1600
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 acagacaaat tccta 1665

<210> 160

<211> 463

<212> PRT

<213> Homo sapiens

<400> 160

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Trp | Gly | Arg | Glu | Arg | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Gly | Gln | Thr | Ser | Lys | Leu | Leu | Thr | Met | Gln | Ser | Ser | Val | Thr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Gln | Glu | Gly | Leu | Cys | Val | His | Val | Pro | Cys | Ser | Phe | Ser | Tyr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Pro | Ser | His | Gly | Trp | Ile | Tyr | Pro | Gly | Pro | Val | Val | His | Gly | Tyr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Trp | Phe | Arg | Glu | Gly | Ala | Asn | Thr | Asp | Gln | Asp | Ala | Pro | Val | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Thr | Asn | Asn | Pro | Ala | Arg | Ala | Val | Trp | Glu | Glu | Thr | Arg | Asp | Arg | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Phe | His | Leu | Leu | Gly | Asp | Pro | His | Thr | Lys | Asn | Cys | Thr | Leu | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Arg | Asp | Ala | Arg | Arg | Ser | Asp | Ala | Gly | Arg | Tyr | Phe | Phe | Arg | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Met | Glu | Lys | Gly | Ser | Ile | Lys | Trp | Asn | Tyr | Lys | His | His | Arg | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Val | Asn | Val | Thr | Ala | Leu | Thr | His | Arg | Pro | Asn | Ile | Leu | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Gly | Thr | Leu | Glu | Ser | Gly | Cys | Pro | Gln | Asn | Leu | Thr | Cys | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Pro | Trp | Ala | Cys | Glu | Gln | Gly | Thr | Pro | Pro | Met | Ile | Ser | Trp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ile Gly Thr Ser | Val Ser Pro Leu Asp | Pro Ser Thr Thr Arg | Ser |
| | 185 | 190 | 195 |
| Ser Val Leu Thr | Leu Ile Pro Gln Pro | Gln Asp His Gly Thr | Ser |
| | 200 | 205 | 210 |
| Leu Thr Cys Gln | Val Thr Phe Pro Gly | Ala Ser Val Thr Thr | Asn |
| | 215 | 220 | 225 |
| Lys Thr Val His | Leu Asn Val Ser Tyr | Pro Pro Gln Asn Leu | Thr |
| | 230 | 235 | 240 |
| Met Thr Val Phe | Gln Gly Asp Gly Thr | Val Ser Thr Val Leu | Gly |
| | 245 | 250 | 255 |
| Asn Gly Ser Ser | Leu Ser Leu Pro Glu | Gly Gln Ser Leu Arg | Leu |
| | 260 | 265 | 270 |
| Val Cys Ala Val | Asp Ala Val Asp Ser | Asn Pro Pro Ala Arg | Leu |
| | 275 | 280 | 285 |
| Ser Leu Ser Trp | Arg Gly Leu Thr Leu | Cys Pro Ser Gln Pro | Ser |
| | 290 | 295 | 300 |
| Asn Pro Gly Val | Leu Glu Leu Pro Trp | Val His Leu Arg Asp | Ala |
| | 305 | 310 | 315 |
| Ala Glu Phe Thr | Cys Arg Ala Gln Asn | Pro Leu Gly Ser Gln | Gln |
| | 320 | 325 | 330 |
| Val Tyr Leu Asn | Val Ser Leu Gln Ser | Lys Ala Thr Ser Gly | Val |
| | 335 | 340 | 345 |
| Thr Gln Gly Val | Val Gly Gly Ala Gly | Ala Thr Ala Leu Val | Phe |
| | 350 | 355 | 360 |
| Leu Ser Phe Cys | Val Ile Phe Val Val | Val Arg Ser Cys Arg | Lys |
| | 365 | 370 | 375 |
| Lys Ser Ala Arg | Pro Ala Ala Gly Val | Gly Asp Thr Gly Ile | Glu |
| | 380 | 385 | 390 |
| Asp Ala Asn Ala | Val Arg Gly Ser Ala | Ser Gln Gly Pro Leu | Thr |
| | 395 | 400 | 405 |
| Glu Pro Trp Ala | Glu Asp Ser Pro Pro | Asp Gln Pro Pro Pro | Ala |
| | 410 | 415 | 420 |
| Ser Ala Arg Ser | Ser Val Gly Glu Gly | Glu Leu Gln Tyr Ala | Ser |
| | 425 | 430 | 435 |
| Leu Ser Phe Gln | Met Val Lys Pro Trp | Asp Ser Arg Gly Gln | Glu |
| | 440 | 445 | 450 |
| Ala Thr Asp Thr | Glu Tyr Ser Glu Ile | Lys Ile His Arg | |
| | 455 | 460 | |

<210> 161
<211> 739
<212> DNA
<213> Homo sapiens

<400> 161
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cctggaggag gaggatatca cagggacctg gtacgtgaag gccatggtgg 150
tcgataagga ctttccggag gacaggaggc ccaggaagggt gtccccagtg 200
aaggtgacag ccctgggagg tgggaagttg gaagccacgt tcaccttcat 250
gagggaggat cgggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300
agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350
gagctgcccc ggagggacca ctacatcttt tactgcaaag accagcacca 400
tgggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450
accgggaggc cctggaagaa ttttaagaaat tgggtgcagcg caagggactc 500
tcggaggagg acattttcac gccctgcag acgggaagct gcgttcccga 550
aactaggca gccccgggt ctgcacctcc agagcccacc ctaccaccag 600
acacagagcc cggaccacct ggacctacc tccagccatg acccttcctt 650
gtccccaccc acctgactcc aaataaagtc cttttcccc aaaaaaaaaa 700
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 739

<210> 162
<211> 170
<212> PRT
<213> Homo sapiens

<400> 162
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1 5 10 15
Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr
20 25 30
Val Lys Ala Met Val Val Asp Lys Asp Phe Pro Glu Asp Arg Arg
35 40 45
Pro Arg Lys Val Ser Pro Val Lys Val Thr Ala Leu Gly Gly Gly
50 55 60
Lys Leu Glu Ala Thr Phe Thr Phe Met Arg Glu Asp Arg Cys Ile
65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Lys | Lys | Ile | Leu | Met | Arg | Lys | Thr | Glu | Glu | Pro | Gly | Lys | Tyr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Ala | Tyr | Gly | Gly | Arg | Lys | Leu | Met | Tyr | Leu | Gln | Glu | Leu | Pro | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Arg | Asp | His | Tyr | Ile | Phe | Tyr | Cys | Lys | Asp | Gln | His | His | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Leu | His | Met | Gly | Lys | Leu | Val | Gly | Arg | Asn | Ser | Asp | Thr | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Arg | Glu | Ala | Leu | Glu | Glu | Phe | Lys | Lys | Leu | Val | Gln | Arg | Lys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Leu | Ser | Glu | Glu | Asp | Ile | Phe | Thr | Pro | Leu | Gln | Thr | Gly | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Cys | Val | Pro | Glu | His | | | | | | | | | | | |
| | | | | 170 | | | | | | | | | | | |

<210> 163
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 163
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<210> 164
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 164
 ggagatgaag accctgttcc tgggtg 26

<210> 165
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 165
 gtcctccgga aagtccttat c 21

<210> 166
 <211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 166
gcctagtgtt cgggaacgca gcttc 25

<210> 167
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 167
cagggacctg gtacgtgaag gccatggtgg tcgataagga ctttcggag 50

<210> 168
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 168
ctgtccttca ccctggagga ggaggatatc acagggacct ggtac 45

<210> 169
<211> 1204
<212> DNA
<213> Homo sapiens

<400> 169
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cagagggtctc acagcagcca aggaacctgg ggcccgtcc tccccctcc 100
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gtagggggag agaccaggat catcaagggg ttcgagtgc agcctcactc 200
ccagccctgg caggcagccc tgttcgagaa gacgcggcta ctctgtggg 250
cgacgtcat cgtccccaga tggctcctga cagcagccca ctgcctcaag 300
ccccgtaca tagttcacct ggggcagcac aacctccaga aggaggagg 350
ctgtgagcag acccgacag cactgagtc cttccccac cccggcttca 400
acaacagcct cccaacaaa gaccaccgca atgacatcat gctggtgaag 450
atggcatcgc cagtctccat cacctgggct gtgcgacccc tcacctctc 500

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ctcacgctgt gtcactgctg gcaccagctg cctcatttcc ggctggggca 550
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gccaggggtga ctccgggggc cctctggtct gtaaccagtc tcttcaaggc 750
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ccttgaaata ttgtgactct gggaatgaca acacctgggtt tgttctctgt 1100
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aaatatttgc taaatgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200
aaaa 1204

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<210> 170
<211> 250
<212> PRT
<213> Homo sapiens

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<400> 170
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Val Gly Gly Glu Thr Arg Ile Ile Lys Gly Phe Glu Cys Lys Pro
                      20                      25                      30

His Ser Gln Pro Trp Gln Ala Ala Leu Phe Glu Lys Thr Arg Leu
                      35                      40                      45

Leu Cys Gly Ala Thr Leu Ile Ala Pro Arg Trp Leu Leu Thr Ala
                      50                      55                      60

Ala His Cys Leu Lys Pro Arg Tyr Ile Val His Leu Gly Gln His
                      65                      70                      75

Asn Leu Gln Lys Glu Glu Gly Cys Glu Gln Thr Arg Thr Ala Thr
                      80                      85                      90

Glu Ser Phe Pro His Pro Gly Phe Asn Asn Ser Leu Pro Asn Lys
                      95                      100                     105

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | His | Arg | Asn | Asp | Ile | Met | Leu | Val | Lys | Met | Ala | Ser | Pro | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Ile | Thr | Trp | Ala | Val | Arg | Pro | Leu | Thr | Leu | Ser | Ser | Arg | Cys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Thr | Ala | Gly | Thr | Ser | Cys | Leu | Ile | Ser | Gly | Trp | Gly | Ser | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ser | Ser | Pro | Gln | Leu | Arg | Leu | Pro | His | Thr | Leu | Arg | Cys | Ala | Asn | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Thr | Ile | Ile | Glu | His | Gln | Lys | Cys | Glu | Asn | Ala | Tyr | Pro | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asn | Ile | Thr | Asp | Thr | Met | Val | Cys | Ala | Ser | Val | Gln | Glu | Gly | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Lys | Asp | Ser | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asn | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Ser | Leu | Gln | Gly | Ile | Ile | Ser | Trp | Gly | Gln | Asp | Pro | Cys | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Thr | Arg | Lys | Pro | Gly | Val | Tyr | Thr | Lys | Val | Cys | Lys | Tyr | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Trp | Ile | Gln | Glu | Thr | Met | Lys | Asn | Asn | | | | | | |
| | | | | 245 | | | | | 250 | | | | | | |

<210> 171

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 171

ggctgcggga ctggaagtca tcggg 25

<210> 172

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 172

ctccaggcca tgaggattct gcag 24

<210> 173

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 173

cctctggtct gtaaccag 18

<210> 174

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 174

tctgtgatgt tgccggggta ggcg 24

<210> 175

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 175

cgtgtagaca ccaggctttc gggcg 25

<210> 176

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 176

cccttgatga tcctgggc 18

<210> 177

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 177

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggcctt 50

<210> 178

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 178
gagagaccag gatcatcaag gggttcgagt gcaagcctca ctc 43

<210> 179
<211> 907
<212> DNA
<213> Homo sapiens

<400> 179
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gattcattgt tttcttttat ctgtggggcc tttttactgc tcagagacaa 100
aagaaaagg agagcaccga agaagtga aaatagaagttt tgcacgtcc 150
agaaaactgc tctaagacaa gcaagaagg agacctacta aatgcccatt 200
atgacggcta cctggctaaa gacggctcga aattctactg cagccggaca 250
caaaatgaag gccaccccaa atggtttggt cttggtgttg ggcaagtc 300
aaaaggccta gacattgcta tgacagatat gtgccctgga gaaaagcgaa 350
aagtagttat acccccttca tttgcatacg gaaaggaagg ctatgcagaa 400
ggcaagattc caccggatgc tacattgatt tttgagattg aactttatgc 450
tgtgaccaa ggaccacgga gcattgagac atttaaaca atagacatgg 500
acaatgacag gcagctctct aaagccgaga taaacctcta cttgcaaagg 550
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| Tyr | Leu | Trp | Gly | Leu | Phe | Thr | Ala | Gln | Arg | Gln | Lys | Lys | Glu | Glu | 20 | 25 | 30 |
| Ser | Thr | Glu | Glu | Val | Lys | Ile | Glu | Val | Leu | His | Arg | Pro | Glu | Asn | 35 | 40 | 45 |
| Cys | Ser | Lys | Thr | Ser | Lys | Lys | Gly | Asp | Leu | Leu | Asn | Ala | His | Tyr | 50 | 55 | 60 |
| Asp | Gly | Tyr | Leu | Ala | Lys | Asp | Gly | Ser | Lys | Phe | Tyr | Cys | Ser | Arg | 65 | 70 | 75 |
| Thr | Gln | Asn | Glu | Gly | His | Pro | Lys | Trp | Phe | Val | Leu | Gly | Val | Gly | 80 | 85 | 90 |
| Gln | Val | Ile | Lys | Gly | Leu | Asp | Ile | Ala | Met | Thr | Asp | Met | Cys | Pro | 95 | 100 | 105 |
| Gly | Glu | Lys | Arg | Lys | Val | Val | Ile | Pro | Pro | Ser | Phe | Ala | Tyr | Gly | 110 | 115 | 120 |
| Lys | Glu | Gly | Tyr | Ala | Glu | Gly | Lys | Ile | Pro | Pro | Asp | Ala | Thr | Leu | 125 | 130 | 135 |
| Ile | Phe | Glu | Ile | Glu | Leu | Tyr | Ala | Val | Thr | Lys | Gly | Pro | Arg | Ser | 140 | 145 | 150 |
| Ile | Glu | Thr | Phe | Lys | Gln | Ile | Asp | Met | Asp | Asn | Asp | Arg | Gln | Leu | 155 | 160 | 165 |
| Ser | Lys | Ala | Glu | Ile | Asn | Leu | Tyr | Leu | Gln | Arg | Glu | Phe | Glu | Lys | 170 | 175 | 180 |
| Asp | Glu | Lys | Pro | Arg | Asp | Lys | Ser | Tyr | Gln | Asp | Ala | Val | Leu | Glu | 185 | 190 | 195 |
| Asp | Ile | Phe | Lys | Lys | Asn | Asp | His | Asp | Gly | Asp | Gly | Phe | Ile | Ser | 200 | 205 | 210 |
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<211> 18

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<212> PRT

<213> Homo sapiens

<400> 189

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Gly | Pro | Leu | Leu | Leu | Pro | Gly | Leu | Cys | Phe | Leu | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Phe | Gly | Ala | Val | Thr | Gln | Lys | Thr | Lys | Thr | Ser | Cys | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Pro | Pro | Asn | Ala | Ser | Cys | Val | Asn | Asn | Thr | His | Cys | Thr | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | His | Gly | Tyr | Thr | Ser | Gly | Ser | Gly | Gln | Lys | Leu | Phe | Thr | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Leu | Glu | Thr | Cys | Asn | Ala | Arg | His | Gly | Gly | Ser | Arg | Leu | |
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<211> 248

<212> PRT

<213> Homo sapiens

<400> 194

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| Met | Gly | Leu | Ser | Ile | Phe | Leu | Leu | Leu | Cys | Val | Leu | Gly | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Ala | Ala | Thr | Pro | Lys | Ile | Phe | Asn | Gly | Thr | Glu | Cys | Gly | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ser | Gln | Pro | Trp | Gln | Val | Gly | Leu | Phe | Glu | Gly | Thr | Ser | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Cys | Gly | Gly | Val | Leu | Ile | Asp | His | Arg | Trp | Val | Leu | Thr | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | His | Cys | Ser | Gly | Ser | Arg | Tyr | Trp | Val | Arg | Leu | Gly | Glu | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Leu | Ser | Gln | Leu | Asp | Trp | Thr | Glu | Gln | Ile | Arg | His | Ser | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Ser | Val | Thr | His | Pro | Gly | Tyr | Leu | Gly | Ala | Ser | Thr | Ser | His |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | His | Asp | Leu | Arg | Leu | Leu | Arg | Leu | Arg | Leu | Pro | Val | Arg | Val |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Ser | Val | Gln | Pro | Leu | Pro | Leu | Pro | Asn | Asp | Cys | Ala | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Gly | Thr | Glu | Cys | His | Val | Ser | Gly | Trp | Gly | Ile | Thr | Asn | His |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Arg | Asn | Pro | Phe | Pro | Asp | Leu | Leu | Gln | Cys | Leu | Asn | Leu | Ser |
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| Ile | Val | Ser | His | Ala | Thr | Cys | His | Gly | Val | Tyr | Pro | Gly | Arg | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Ser | Asn | Met | Val | Cys | Ala | Gly | Gly | Val | Pro | Gly | Gln | Asp | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Gly | Gly | Val | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Gly | Leu | Val | Ser | Trp | Gly | Ser | Val | Gly | Pro | Cys | Gly | Gln | Asp |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Ile | Pro | Gly | Val | Tyr | Thr | Tyr | Ile | Cys | Lys | Tyr | Val | Asp | Trp |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Arg | Met | Ile | Met | Arg | Asn | Asn | | | | | | | |
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<213> Homo sapiens

<400> 196

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| Gly | Leu | Leu | Lys | Ala | Arg | Gln | Glu | Arg | Arg | Leu | Ala | Glu | Ile | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Glu | Phe | Leu | Cys | Asp | Gln | Lys | Tyr | Ser | Asp | Glu | Glu | Asn | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Glu | Lys | Leu | Thr | Ala | Phe | Lys | Glu | Lys | Tyr | Met | Glu | Phe | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Asn | Asn | Glu | Gly | Glu | Ile | Asp | Leu | Met | Ser | Leu | Lys | Arg | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Met | Glu | Lys | Leu | Gly | Val | Pro | Lys | Thr | His | Leu | Glu | Met | Lys | Lys | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | |
| Met | Ile | Ser | Glu | Val | Thr | Gly | Gly | Val | Ser | Asp | Thr | Ile | Ser | Tyr | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | |
| Arg | Asp | Phe | Val | Asn | Met | Met | Leu | Gly | Lys | Arg | Ser | Ala | Val | Leu | | |
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| Lys | Leu | Val | Met | Met | Phe | Glu | Gly | Lys | Ala | Asn | Glu | Ser | Ser | Pro | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | |
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| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Leu | Ala | Leu | Ala | Leu | Ala | Ser | Val | Leu | Ser | Gly | Pro | Pro |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ala | Cys | Pro | Thr | Lys | Cys | Thr | Cys | Ser | Ala | Ala | Ser | Val |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Asp | Cys | His | Gly | Leu | Gly | Leu | Arg | Ala | Val | Pro | Arg | Gly | Ile | Pro | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Arg | Asn | Ala | Glu | Arg | Leu | Asp | Leu | Asp | Arg | Asn | Asn | Ile | Thr | Arg | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Ile | Thr | Lys | Met | Asp | Phe | Ala | Gly | Leu | Lys | Asn | Leu | Arg | Val | Leu | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| His | Leu | Glu | Asp | Asn | Gln | Val | Ser | Val | Ile | Glu | Arg | Gly | Ala | Phe | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Gln | Asp | Leu | Lys | Gln | Leu | Glu | Arg | Leu | Arg | Leu | Asn | Lys | Asn | Lys | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Leu | Gln | Val | Leu | Pro | Glu | Leu | Leu | Phe | Gln | Ser | Thr | Pro | Lys | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Thr | Arg | Leu | Asp | Leu | Ser | Glu | Asn | Gln | Ile | Gln | Gly | Ile | Pro | Arg | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Lys | Ala | Phe | Arg | Gly | Ile | Thr | Asp | Val | Lys | Asn | Leu | Gln | Leu | Asp | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asn | Asn | His | Ile | Ser | Cys | Ile | Glu | Asp | Gly | Ala | Phe | Arg | Ala | Leu | | | | | |
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| Arg | Asp | Leu | Glu | Ile | Leu | Thr | Leu | Asn | Asn | Asn | Asn | Ile | Ser | Arg | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ile | Leu | Val | Thr | Ser | Phe | Asn | His | Met | Pro | Lys | Ile | Arg | Thr | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Arg | Leu | His | Ser | Asn | His | Leu | Tyr | Cys | Asp | Cys | His | Leu | Ala | Trp | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Leu | Ser | Asp | Trp | Leu | Arg | Gln | Arg | Arg | Thr | Val | Gly | Gln | Phe | Thr | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Cys | Met | Ala | Pro | Val | His | Leu | Arg | Gly | Phe | Asn | Val | Ala | Asp | | | | | |
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| Val | Gln | Lys | Lys | Glu | Tyr | Val | Cys | Pro | Ala | Pro | His | Ser | Glu | Pro | | | | | |
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| Pro | Ser | Cys | Asn | Ala | Asn | Ser | Ile | Ser | Cys | Pro | Ser | Pro | Cys | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Cys | Ser | Asn | Asn | Ile | Val | Asp | Cys | Arg | Gly | Lys | Gly | Leu | Met | Glu | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ile | Pro | Ala | Asn | Leu | Pro | Glu | Gly | Ile | Val | Glu | Ile | Arg | Leu | Glu | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Gln | Asn | Ser | Ile | Lys | Ala | Ile | Pro | Ala | Gly | Ala | Phe | Thr | Gln | Tyr | | | | | |

| 320 | | | | | 325 | | | | | 330 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Lys | Leu | Lys | Arg | Ile | Asp | Ile | Ser | Lys | Asn | Gln | Ile | Ser | Asp |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ile | Ala | Pro | Asp | Ala | Phe | Gln | Gly | Leu | Lys | Ser | Leu | Thr | Ser | Leu |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Val | Leu | Tyr | Gly | Asn | Lys | Ile | Thr | Glu | Ile | Ala | Lys | Gly | Leu | Phe |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Asp | Gly | Leu | Val | Ser | Leu | Gln | Leu | Leu | Leu | Leu | Asn | Ala | Asn | Lys |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ile | Asn | Cys | Leu | Arg | Val | Asn | Thr | Phe | Gln | Asp | Leu | Gln | Asn | Leu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Leu | Leu | Ser | Leu | Tyr | Asp | Asn | Lys | Leu | Gln | Thr | Ile | Ser | Lys |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Gly | Leu | Phe | Ala | Pro | Leu | Gln | Ser | Ile | Gln | Thr | Leu | His | Leu | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gln | Asn | Pro | Phe | Val | Cys | Asp | Cys | His | Leu | Lys | Trp | Leu | Ala | Asp |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Tyr | Leu | Gln | Asp | Asn | Pro | Ile | Glu | Thr | Ser | Gly | Ala | Arg | Cys | Ser |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Ser | Pro | Arg | Arg | Leu | Ala | Asn | Lys | Arg | Ile | Ser | Gln | Ile | Lys | Ser |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Lys | Lys | Phe | Arg | Cys | Ser | Gly | Ser | Glu | Asp | Tyr | Arg | Ser | Arg | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Ser | Glu | Cys | Phe | Met | Asp | Leu | Val | Cys | Pro | Glu | Lys | Cys | Arg |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Cys | Glu | Gly | Thr | Ile | Val | Asp | Cys | Ser | Asn | Gln | Lys | Leu | Val | Arg |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Ile | Pro | Ser | His | Leu | Pro | Glu | Tyr | Val | Thr | Asp | Leu | Arg | Leu | Asn |
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| Asp | Asn | Glu | Val | Ser | Val | Leu | Glu | Ala | Thr | Gly | Ile | Phe | Lys | Lys |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Pro | Asn | Leu | Arg | Lys | Ile | Asn | Leu | Ser | Asn | Asn | Lys | Ile | Lys |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Glu | Val | Arg | Glu | Gly | Ala | Phe | Asp | Gly | Ala | Ala | Ser | Val | Gln | Glu |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Leu | Met | Leu | Thr | Gly | Asn | Gln | Leu | Glu | Thr | Val | His | Gly | Arg | Val |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Phe | Arg | Gly | Leu | Ser | Gly | Leu | Lys | Thr | Leu | Met | Leu | Arg | Ser | Asn |

| 605 | | | | | | | | | | 610 | | | | | 615 | | | | |
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| Leu | Ile | Ser | Cys | Val | Ser | Asn | Asp | Thr | Phe | Ala | Gly | Leu | Ser | Ser | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Val | Arg | Leu | Leu | Ser | Leu | Tyr | Asp | Asn | Arg | Ile | Thr | Thr | Ile | Thr | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Pro | Gly | Ala | Phe | Thr | Thr | Leu | Val | Ser | Leu | Ser | Thr | Ile | Asn | Leu | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Leu | Ser | Asn | Pro | Phe | Asn | Cys | Asn | Cys | His | Leu | Ala | Trp | Leu | Gly | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Lys | Trp | Leu | Arg | Lys | Arg | Arg | Ile | Val | Ser | Gly | Asn | Pro | Arg | Cys | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Gln | Lys | Pro | Phe | Phe | Leu | Lys | Glu | Ile | Pro | Ile | Gln | Asp | Val | Ala | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ile | Gln | Asp | Phe | Thr | Cys | Asp | Gly | Asn | Glu | Glu | Ser | Ser | Cys | Gln | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Leu | Ser | Pro | Arg | Cys | Pro | Glu | Gln | Cys | Thr | Cys | Met | Glu | Thr | Val | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Val | Arg | Cys | Ser | Asn | Lys | Gly | Leu | Arg | Ala | Leu | Pro | Arg | Gly | Met | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Pro | Lys | Asp | Val | Thr | Glu | Leu | Tyr | Leu | Glu | Gly | Asn | His | Leu | Thr | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Ala | Val | Pro | Arg | Glu | Leu | Ser | Ala | Leu | Arg | His | Leu | Thr | Leu | Ile | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | |
| Asp | Leu | Ser | Asn | Asn | Ser | Ile | Ser | Met | Leu | Thr | Asn | Tyr | Thr | Phe | | | | | |
| | | | | 785 | | | | | 790 | | | | | 795 | | | | | |
| Ser | Asn | Met | Ser | His | Leu | Ser | Thr | Leu | Ile | Leu | Ser | Tyr | Asn | Arg | | | | | |
| | | | | 800 | | | | | 805 | | | | | 810 | | | | | |
| Leu | Arg | Cys | Ile | Pro | Val | His | Ala | Phe | Asn | Gly | Leu | Arg | Ser | Leu | | | | | |
| | | | | 815 | | | | | 820 | | | | | 825 | | | | | |
| Arg | Val | Leu | Thr | Leu | His | Gly | Asn | Asp | Ile | Ser | Ser | Val | Pro | Glu | | | | | |
| | | | | 830 | | | | | 835 | | | | | 840 | | | | | |
| Gly | Ser | Phe | Asn | Asp | Leu | Thr | Ser | Leu | Ser | His | Leu | Ala | Leu | Gly | | | | | |
| | | | | 845 | | | | | 850 | | | | | 855 | | | | | |
| Thr | Asn | Pro | Leu | His | Cys | Asp | Cys | Ser | Leu | Arg | Trp | Leu | Ser | Glu | | | | | |
| | | | | 860 | | | | | 865 | | | | | 870 | | | | | |
| Trp | Val | Lys | Ala | Gly | Tyr | Lys | Glu | Pro | Gly | Ile | Ala | Arg | Cys | Ser | | | | | |
| | | | | 875 | | | | | 880 | | | | | 885 | | | | | |
| Ser | Pro | Glu | Pro | Met | Ala | Asp | Arg | Leu | Leu | Leu | Thr | Thr | Pro | Thr | | | | | |

| | | |
|---|------|------|
| 890 | 895 | 900 |
| His Arg Phe Gln Cys Lys Gly Pro Val Asp Ile Asn Ile Val Ala | | |
| 905 | 910 | 915 |
| Lys Cys Asn Ala Cys Leu Ser Ser Pro Cys Lys Asn Asn Gly Thr | | |
| 920 | 925 | 930 |
| Cys Thr Gln Asp Pro Val Glu Leu Tyr Arg Cys Ala Cys Pro Tyr | | |
| 935 | 940 | 945 |
| Ser Tyr Lys Gly Lys Asp Cys Thr Val Pro Ile Asn Thr Cys Ile | | |
| 950 | 955 | 960 |
| Gln Asn Pro Cys Gln His Gly Gly Thr Cys His Leu Ser Asp Ser | | |
| 965 | 970 | 975 |
| His Lys Asp Gly Phe Ser Cys Ser Cys Pro Leu Gly Phe Glu Gly | | |
| 980 | 985 | 990 |
| Gln Arg Cys Glu Ile Asn Pro Asp Asp Cys Glu Asp Asn Asp Cys | | |
| 995 | 1000 | 1005 |
| Glu Asn Asn Ala Thr Cys Val Asp Gly Ile Asn Asn Tyr Val Cys | | |
| 1010 | 1015 | 1020 |
| Ile Cys Pro Pro Asn Tyr Thr Gly Glu Leu Cys Asp Glu Val Ile | | |
| 1025 | 1030 | 1035 |
| Asp His Cys Val Pro Glu Leu Asn Leu Cys Gln His Glu Ala Lys | | |
| 1040 | 1045 | 1050 |
| Cys Ile Pro Leu Asp Lys Gly Phe Ser Cys Glu Cys Val Pro Gly | | |
| 1055 | 1060 | 1065 |
| Tyr Ser Gly Lys Leu Cys Glu Thr Asp Asn Asp Asp Cys Val Ala | | |
| 1070 | 1075 | 1080 |
| His Lys Cys Arg His Gly Ala Gln Cys Val Asp Thr Ile Asn Gly | | |
| 1085 | 1090 | 1095 |
| Tyr Thr Cys Thr Cys Pro Gln Gly Phe Ser Gly Pro Phe Cys Glu | | |
| 1100 | 1105 | 1110 |
| His Pro Pro Pro Met Val Leu Leu Gln Thr Ser Pro Cys Asp Gln | | |
| 1115 | 1120 | 1125 |
| Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val Val Gln Gln Glu | | |
| 1130 | 1135 | 1140 |
| Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro Arg Cys Glu | | |
| 1145 | 1150 | 1155 |
| Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr Val Glu | | |
| 1160 | 1165 | 1170 |
| Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu Gln | | |

| 1175 | 1180 | 1185 |
|---|------|------|
| Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp 1190 | 1195 | 1200 |
| Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu 1205 | 1210 | 1215 |
| Val Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val 1220 | 1225 | 1230 |
| Glu Thr Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr 1235 | 1240 | 1245 |
| Leu Asn Gln Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys 1250 | 1255 | 1260 |
| Ser Leu Gly Lys Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser 1265 | 1270 | 1275 |
| Pro Leu Tyr Leu Gly Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala 1280 | 1285 | 1290 |
| Leu Arg Gln Gly Thr Asp Arg Pro Leu Gly Gly Phe His Gly Cys 1295 | 1300 | 1305 |
| Ile His Glu Val Arg Ile Asn Asn Glu Leu Gln Asp Phe Lys Ala 1310 | 1315 | 1320 |
| Leu Pro Pro Gln Ser Leu Gly Val Ser Pro Gly Cys Lys Ser Cys 1325 | 1330 | 1335 |
| Thr Val Cys Lys His Gly Leu Cys Arg Ser Val Glu Lys Asp Ser 1340 | 1345 | 1350 |
| Val Val Cys Glu Cys Arg Pro Gly Trp Thr Gly Pro Leu Cys Asp 1355 | 1360 | 1365 |
| Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg Cys His His Gly 1370 | 1375 | 1380 |
| Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys Cys Ala Glu 1385 | 1390 | 1395 |
| Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser Ala Asn 1400 | 1405 | 1410 |
| Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile Ser 1415 | 1420 | 1425 |
| Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly 1430 | 1435 | 1440 |
| Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg 1445 | 1450 | 1455 |
| Glu Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala | | |

| | | |
|---|------|------|
| 1460 | 1465 | 1470 |
| Ser Lys Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln | | |
| 1475 | 1480 | 1485 |
| Cys Cys Gln Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln | | |
| 1490 | 1495 | 1500 |
| Cys Thr Asp Gly Ser Ser Phe Val Glu Glu Val Glu Arg His Leu | | |
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| Gly | Ala | Glu | Ser | Lys | Ile | Tyr | Thr | Arg | Cys | Lys | Leu | Ala | Lys | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Ser | Arg | Ala | Gly | Leu | Asp | Asn | Tyr | Trp | Gly | Phe | Ser | Leu | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Trp | Ile | Cys | Met | Ala | Tyr | Tyr | Glu | Ser | Gly | Tyr | Asn | Thr | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Pro | Thr | Val | Leu | Asp | Asp | Gly | Ser | Ile | Asp | Tyr | Gly | Ile | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gln | Ile | Asn | Ser | Phe | Ala | Trp | Cys | Arg | Arg | Gly | Lys | Leu | Lys | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Asn | His | Cys | His | Val | Ala | Cys | Ser | Ala | Leu | Ile | Thr | Asp | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Thr | Asp | Ala | Ile | Ile | Cys | Ala | Arg | Lys | Ile | Val | Lys | Glu | Thr |
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Arg Asp Leu Ser Glu Trp Lys Lys Gly Cys Glu Val Ser
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ctttttacct tgggtgtctgc ctgtatccca gtgttcaggc tggctagacg 200
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gaggaataca ccacaggcat ggcagactgc atcttagtca acagccagtt 350
cacagctgct gtttttaagg aaacattcaa gtccctgtct cacatagacc 400
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ctccatcaac agatacgaaa ggaagaaaaa tctgactttg gcactggaag 550
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catctgatcg tggcagggtg ttatgacgag agagtccctg agaattgtgga 650
acattatcag gaattgaaga aaatgggtcca acagtccgac cttggccagt 700
atgtgacctt cttgaggtct ttctcagaca aacagaaaat ctccctctc 750
cacagctgca cgtgtgtgct ttacacacca agcaatgagc actttggcat 800
tgtccctctg gaagccatgt acatgcagtg cccagtcatt gctgttaatt 850
cgggtggacc cttggagtcc attgaccaca gtgtcacagg gtttctgtgt 900
gagcctgacc cgggtgcactt ctcagaagca atagaaaagt tcatccgtga 950
accttcctta aaagccacca tgggcctggc tggaagagcc agagtgaagg 1000
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atgcagaaga gatcttttaa aaaataaact tgagtcttga atgtgagcca 1200
 ctttcctata taccacacct ccctgtccac ttttcagaaa aaccatgtct 1250
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 tgtcattcca tggtcagcag agtatatttaa ttatatatttc tcgggattat 1350
 tgctcttctg tctataaatt ttgaatgata ctgtgcctta attggttttc 1400
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 ataatgagag cagggctatt gtagttccca gattcaatcc accgaagtgt 1500
 tcactgtcat ctgttaggga atttttgttt gtctgtctt tgcttgatc 1550
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<210> 210

<211> 323

<212> PRT

<213> Homo sapiens

<400> 210

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Leu | Leu | Lys | Leu | Val | His | Gly | Ser | Pro | Leu | Val | Phe | Gly | 1 | 5 | 10 | 15 |
| Glu | Lys | Phe | Lys | Leu | Phe | Thr | Leu | Val | Ser | Ala | Cys | Ile | Pro | Val | 20 | 25 | 30 | |
| Phe | Arg | Leu | Ala | Arg | Arg | Arg | Lys | Lys | Ile | Leu | Phe | Tyr | Cys | His | 35 | 40 | 45 | |
| Phe | Pro | Asp | Leu | Leu | Leu | Thr | Lys | Arg | Asp | Ser | Phe | Leu | Lys | Arg | 50 | 55 | 60 | |
| Leu | Tyr | Arg | Ala | Pro | Ile | Asp | Trp | Ile | Glu | Glu | Tyr | Thr | Thr | Gly | 65 | 70 | 75 | |
| Met | Ala | Asp | Cys | Ile | Leu | Val | Asn | Ser | Gln | Phe | Thr | Ala | Ala | Val | 80 | 85 | 90 | |
| Phe | Lys | Glu | Thr | Phe | Lys | Ser | Leu | Ser | His | Ile | Asp | Pro | Asp | Val | 95 | 100 | 105 | |
| Leu | Tyr | Pro | Ser | Leu | Asn | Val | Thr | Ser | Phe | Asp | Ser | Val | Val | Pro | 110 | 115 | 120 | |
| Glu | Lys | Leu | Asp | Asp | Leu | Val | Pro | Lys | Gly | Lys | Lys | Phe | Leu | Leu | 125 | 130 | 135 | |
| Leu | Ser | Ile | Asn | Arg | Tyr | Glu | Arg | Lys | Lys | Asn | Leu | Thr | Leu | Ala | 140 | 145 | 150 | |
| Leu | Glu | Ala | Leu | Val | Gln | Leu | Arg | Gly | Arg | Leu | Thr | Ser | Gln | Asp | | | | |

| | | | | | |
|---------------------|---------------------|-------------------------|-----|--|-----|
| | 155 | | 160 | | 165 |
| Trp Glu Arg Val | His Leu Ile Val Ala | Gly Gly Tyr Asp Glu Arg | | | |
| | 170 | | 175 | | 180 |
| Val Leu Glu Asn Val | Glu His Tyr Gln | Glu Leu Lys Lys Met Val | | | |
| | 185 | | 190 | | 195 |
| Gln Gln Ser Asp Leu | Gly Gln Tyr Val Thr | Phe Leu Arg Ser Phe | | | |
| | 200 | | 205 | | 210 |
| Ser Asp Lys Gln Lys | Ile Ser Leu Leu His | Ser Cys Thr Cys Val | | | |
| | 215 | | 220 | | 225 |
| Leu Tyr Thr Pro Ser | Asn Glu His Phe Gly | Ile Val Pro Leu Glu | | | |
| | 230 | | 235 | | 240 |
| Ala Met Tyr Met Gln | Cys Pro Val Ile Ala | Val Asn Ser Gly Gly | | | |
| | 245 | | 250 | | 255 |
| Pro Leu Glu Ser Ile | Asp His Ser Val Thr | Gly Phe Leu Cys Glu | | | |
| | 260 | | 265 | | 270 |
| Pro Asp Pro Val His | Phe Ser Glu Ala Ile | Glu Lys Phe Ile Arg | | | |
| | 275 | | 280 | | 285 |
| Glu Pro Ser Leu Lys | Ala Thr Met Gly Leu | Ala Gly Arg Ala Arg | | | |
| | 290 | | 295 | | 300 |
| Val Lys Glu Lys Phe | Ser Pro Glu Ala Phe | Thr Glu Gln Leu Tyr | | | |
| | 305 | | 310 | | 315 |
| Arg Tyr Val Thr Lys | Leu Leu Val | | | | |
| | 320 | | | | |

<210> 211
 <211> 1554
 <212> DNA
 <213> Homo sapiens

<400> 211
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 tctacctcta tccggcttcc agacaagctg caggaattcc agggattact 150
 ccaactgaag aaaaagatgg taatcttcca gatattgtga atagtggaag 200
 tttgcatgag ttcttggtta atttgcata gagatatggg cctgtggtct 250
 ccttctggtt tggcaggcgc ctcttggtta gtttgggcac tgttgatgta 300
 ctgaagcagc atatcaatcc caataagaca tcggaccctt ttgaaaccat 350
 gctgaagtca ttattaaggt atcaatctgg tgggtggcagt gtgagtgaag 400

accacatgag gaaaaaattg tatgaaaatg gtgtgactga ttctctgaag 450
 agtaactttg cctcctcct aaagctttca gaagaattat tagataaatg 500
 gctctcctac ccagagaccc agcacgtgcc cctcagccag catatgcttg 550
 gttttgctat gaagtctgtt acacagatgg taatgggtag tacatttgaa 600
 gatgatcagg aagtcattcg cttccagaag aatcatggca cagtttggtc 650
 tgagattgga aaaggctttc tagatgggtc acttgataaa aacatgactc 700
 ggaaaaaaca atatgaagat gccctcatgc aactggagtc tgttttaagg 750
 aacatcataa aagaacgaaa aggaaggaac ttcagtcaac atattttcat 800
 tgactcctta gtacaaggga accttaatga ccaacagatc ctagaagaca 850
 gtatgatatt ttctctggcc agttgcataa taactgcaaa attgtgtacc 900
 tgggcaatct gttttttaac cacctctgaa gaagttcaaa aaaaattata 950
 tgaagagata aaccaagttt ttggaaatgg tcctgttact ccagagaaaa 1000
 ttgagcagct cagatattgt cagcatgtgc tttgtgaaac tgttcgaact 1050
 gccaaactga ctccagtttc tgcccagctt caagatattg aaggaaaaat 1100
 tgaccgattt attattccta gagagaccct cgtcctttat gcccttggtg 1150
 tgggtacttca ggatcctaata acttggccat ctccacacaa gtttgatcca 1200
 gatcggtttg atgatgaatt agtaatgaaa actttttcct cacttggatt 1250
 ctcaggcaca caggagtgtc cagagttgag gtttgcatat atggtgacca 1300
 cagtacttct tagtgtattg gtgaagagac tgcacctact ttctgtggag 1350
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 agcttggatc actgtctcaa agagatatta aaattttata catttaaaat 1450
 cattgttaaa ttgattgagg aaaacaacca tttaaaaaaaa atctatgttg 1500
 aatcctttta taaaccagta tcactttgta atataaacac ctatttgtac 1550
 ttaa 1554

<210> 212

<211> 462

<212> PRT

<213> Homo sapiens

<400> 212

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asp | Phe | Ala | Ile | Phe | Ala | Val | Thr | Phe | Leu | Leu | Ala | Leu |
| 1 | | | | | 5 | | | | 10 | | | | 15 | |

| | | | | |
|-----------------|-----------------|-----------------|-------------|--|
| Val Gly Ala Val | Leu Tyr Leu Tyr | Pro Ala Ser Arg | Gln Ala Ala | |
| | 20 | 25 | 30 | |
| Gly Ile Pro Gly | Ile Thr Pro Thr | Glu Glu Lys Asp | Gly Asn Leu | |
| | 35 | 40 | 45 | |
| Pro Asp Ile Val | Asn Ser Gly Ser | Leu His Glu Phe | Leu Val Asn | |
| | 50 | 55 | 60 | |
| Leu His Glu Arg | Tyr Gly Pro Val | Val Ser Phe Trp | Phe Gly Arg | |
| | 65 | 70 | 75 | |
| Arg Leu Val Val | Ser Leu Gly Thr | Val Asp Val Leu | Lys Gln His | |
| | 80 | 85 | 90 | |
| Ile Asn Pro Asn | Lys Thr Ser Asp | Pro Phe Glu Thr | Met Leu Lys | |
| | 95 | 100 | 105 | |
| Ser Leu Leu Arg | Tyr Gln Ser Gly | Gly Gly Ser Val | Ser Glu Asn | |
| | 110 | 115 | 120 | |
| His Met Arg Lys | Lys Leu Tyr Glu | Asn Gly Val Thr | Asp Ser Leu | |
| | 125 | 130 | 135 | |
| Lys Ser Asn Phe | Ala Leu Leu Leu | Lys Leu Ser Glu | Glu Leu Leu | |
| | 140 | 145 | 150 | |
| Asp Lys Trp Leu | Ser Tyr Pro Glu | Thr Gln His Val | Pro Leu Ser | |
| | 155 | 160 | 165 | |
| Gln His Met Leu | Gly Phe Ala Met | Lys Ser Val Thr | Gln Met Val | |
| | 170 | 175 | 180 | |
| Met Gly Ser Thr | Phe Glu Asp Asp | Gln Glu Val Ile | Arg Phe Gln | |
| | 185 | 190 | 195 | |
| Lys Asn His Gly | Thr Val Trp Ser | Glu Ile Gly Lys | Gly Phe Leu | |
| | 200 | 205 | 210 | |
| Asp Gly Ser Leu | Asp Lys Asn Met | Thr Arg Lys Lys | Gln Tyr Glu | |
| | 215 | 220 | 225 | |
| Asp Ala Leu Met | Gln Leu Glu Ser | Val Leu Arg Asn | Ile Ile Lys | |
| | 230 | 235 | 240 | |
| Glu Arg Lys Gly | Arg Asn Phe Ser | Gln His Ile Phe | Ile Asp Ser | |
| | 245 | 250 | 255 | |
| Leu Val Gln Gly | Asn Leu Asn Asp | Gln Gln Ile Leu | Glu Asp Ser | |
| | 260 | 265 | 270 | |
| Met Ile Phe Ser | Leu Ala Ser Cys | Ile Ile Thr Ala | Lys Leu Cys | |
| | 275 | 280 | 285 | |
| Thr Trp Ala Ile | Cys Phe Leu Thr | Thr Ser Glu Glu | Val Gln Lys | |
| | 290 | 295 | 300 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Leu | Tyr | Glu | Glu | Ile | Asn | Gln | Val | Phe | Gly | Asn | Gly | Pro | Val | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Pro | Glu | Lys | Ile | Glu | Gln | Leu | Arg | Tyr | Cys | Gln | His | Val | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Cys | Glu | Thr | Val | Arg | Thr | Ala | Lys | Leu | Thr | Pro | Val | Ser | Ala | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Leu | Gln | Asp | Ile | Glu | Gly | Lys | Ile | Asp | Arg | Phe | Ile | Ile | Pro | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Thr | Leu | Val | Leu | Tyr | Ala | Leu | Gly | Val | Val | Leu | Gln | Asp | Pro | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Asn | Thr | Trp | Pro | Ser | Pro | His | Lys | Phe | Asp | Pro | Asp | Arg | Phe | Asp | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Asp | Glu | Leu | Val | Met | Lys | Thr | Phe | Ser | Ser | Leu | Gly | Phe | Ser | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Gln | Glu | Cys | Pro | Glu | Leu | Arg | Phe | Ala | Tyr | Met | Val | Thr | Thr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Val | Leu | Leu | Ser | Val | Leu | Val | Lys | Arg | Leu | His | Leu | Leu | Ser | Val | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Glu | Gly | Gln | Val | Ile | Glu | Thr | Lys | Tyr | Glu | Leu | Val | Thr | Ser | Ser | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Arg | Glu | Glu | Ala | Trp | Ile | Thr | Val | Ser | Lys | Arg | Tyr | | | | |
| | | | | 455 | | | | | 460 | | | | | | |

<210> 213
 <211> 759
 <212> DNA
 <213> Homo sapiens

<400> 213
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 tcagggttg tgccctctcg ctctctgacg ctctggcgc atctggtggt 150
 cgtcatcacc ttattctggt cccgggacag caacatacag gcctgcctgc 200
 ctctcacgtt ccccccgag gagtatgaca agcaggacat tcagctggtg 250
 gccgcgctct ctgtcaccct gggcctcttt gcagtggagc tggccggttt 300
 cctctcagga gtctccatgt tcaacagcac ccagagcctc atctccattg 350
 gggctcaactg tagtgcaccc gtggccctgt ccttcttcat attcgagcgt 400
 tgggagtgca ctacgtattg gtacatTTTT gtcttctgca gtgcccttcc 450

```

agctgtcact gaaatggctt tattcgtcac cgtctttggg ctgaaaaaga 500
aacccttctg attaccttca tgacgggaac ctaaggacga agcctacagg 550
ggcaagggcc gcttcgtatt cctggaagaa ggaaggcata ggcttcgggtt 600
ttcccctcgg aaactgcttc tgctggagga tatgtgttgg aataattacg 650
tcttgagtct gggattatcc gcattgtatt tagtgctttg taataaaata 700
tgttttgtag taacattaag acttatatac agttttaggg gacaattaa 750
aaaaaaaa 759

```

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<210> 214
<211> 140
<212> PRT
<213> Homo sapiens

```

```

<400> 214
Met Gly Arg Val Ser Gly Leu Val Pro Ser Arg Phe Leu Thr Leu
  1              5              10              15

Leu Ala His Leu Val Val Val Ile Thr Leu Phe Trp Ser Arg Asp
              20              25              30

Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
              35              40              45

Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
              50              55              60

Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
              65              70              75

Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
              80              85              90

Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
              95              100             105

Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
              110             115             120

Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
              125             130             135

Lys Lys Lys Pro Phe
              140

```

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<210> 215
<211> 697
<212> DNA
<213> Homo sapiens

```

```

<400> 215
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```

```

cctgggctct ccccgacctc cttcgactcg gagcggtca ggagacagaa 100
gacccggcct gctgcagccc catagtgcc cggaacgagt ggaaggccct 150
ggcatcagag tgcgcccagc acctgagcct gcccttacgc tatgtggtgg 200
tatcgcacac ggcgggcagc agctgcaaca ccccgacctc gtgccagcag 250
caggcccgga atgtgcagca ctaccacatg aagacactgg gctggtgcga 300
cgtgggttac aacttcctga ttggagaaga cgggctcgta tacgagggcc 350
gtgggtgga cttcacgggt gccactcag gtcacttatg gaaccccatg 400
tccattggca tcagcttcac gggcaactac atggatcggg tgcccacacc 450
ccaggccatc cgggcagccc agggctctact ggctgcggt gtggctcagg 500
gagccctgag gtccaactat gtgctcaaag gacaccggga tgtgcagcgt 550
acactctctc caggcaacca gctctaccac ctcattcaga attggccaca 600
ctaccgtccc cctgagggcc ctgctgatcc gcacccatt cctcccctcc 650
catggccaaa aacccactg tctccttctc caataaagat gtagctc 697

```

<210> 216

<211> 196

<212> PRT

<213> Homo sapiens

<400> 216

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Arg | Arg | Ser | Met | Leu | Leu | Ala | Trp | Ala | Leu | Pro | Ser | Leu | 1 | 5 | 10 | 15 |
| Leu | Arg | Leu | Gly | Ala | Ala | Gln | Glu | Thr | Glu | Asp | Pro | Ala | Cys | Cys | 20 | 25 | 30 | |
| Ser | Pro | Ile | Val | Pro | Arg | Asn | Glu | Trp | Lys | Ala | Leu | Ala | Ser | Glu | 35 | 40 | 45 | |
| Cys | Ala | Gln | His | Leu | Ser | Leu | Pro | Leu | Arg | Tyr | Val | Val | Val | Ser | 50 | 55 | 60 | |
| His | Thr | Ala | Gly | Ser | Ser | Cys | Asn | Thr | Pro | Ala | Ser | Cys | Gln | Gln | 65 | 70 | 75 | |
| Gln | Ala | Arg | Asn | Val | Gln | His | Tyr | His | Met | Lys | Thr | Leu | Gly | Trp | 80 | 85 | 90 | |
| Cys | Asp | Val | Gly | Tyr | Asn | Phe | Leu | Ile | Gly | Glu | Asp | Gly | Leu | Val | 95 | 100 | 105 | |
| Tyr | Glu | Gly | Arg | Gly | Trp | Asn | Phe | Thr | Gly | Ala | His | Ser | Gly | His | 110 | 115 | 120 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Trp | Asn | Pro | Met | Ser | Ile | Gly | Ile | Ser | Phe | Met | Gly | Asn | Tyr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Met | Asp | Arg | Val | Pro | Thr | Pro | Gln | Ala | Ile | Arg | Ala | Ala | Gln | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Leu | Ala | Cys | Gly | Val | Ala | Gln | Gly | Ala | Leu | Arg | Ser | Asn | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Leu | Lys | Gly | His | Arg | Asp | Val | Gln | Arg | Thr | Leu | Ser | Pro | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Gln | Leu | Tyr | His | Leu | Ile | Gln | Asn | Trp | Pro | His | Tyr | Arg | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |

Pro

<210> 217
 <211> 1871
 <212> DNA
 <213> Homo sapiens

<400> 217
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 tctatctggt catctgtggc caggatgatg gtccctcccg ctcagaggac 150
 cctgagcgtg atgaccacga gggccagccc cggccccggg tgcctcggaa 200
 gcggggccac atctcaccta agtcccggcc catggccaat tccactctcc 250
 tagggctgct ggccccgcct ggggaggctt ggggcattct tgggcagccc 300
 cccaaccgcc cgaaccacag cccccacccc tcagccaagg tgaagaaaat 350
 ctttggtggt ggcgacttct actccaacat caagacggtg gccctgaacc 400
 tgctcgtcac aggggaagatt gtggaccatg gcaatgggac cttcagcgtc 450
 cacttccaac acaatgccac aggccaggga aacatctcca tcagcctcgt 500
 gccccccagt aaagctgtag agttccacca ggaacagcag atcttcatcg 550
 aagccaaggc ctcaaaaatc ttcaactgcc ggatggagtg ggagaaggta 600
 gaacggggcc gccggacctc gctttgcacc cacgaccag ccaagatctg 650
 ctcccgagac cacgctcaga gctcagccac ctggagctgc tcccagccct 700
 tcaaagtcgt ctgtgtctac atcgcttct acagcacgga ctatcggtg 750
 gtccagaagg tgtgcccaga ttacaactac catagtata cccctacta 800
 cccatctggg tgaccggggg caggccacag aggccaggcc agggctggaa 850

ggacaggcct gcccatgcag gagaccatct ggacaccggg caggaaggg 900
 gttgggcctc aggcaggag ggggtggag acgaggagat gccaagtggg 950
 gccagggccca agtctcaagt ggcagagaaa ggggcccaag tgctgggtccc 1000
 aacctgaagc tgtggagtga ctagatcaca ggagcactgg aggaggagtg 1050
 ggctctctgt gcagcctcac agggctttgc cacggagcca cagagagatg 1100
 ctgggtcccc gaggcctgtg ggcaggccga tcagtgtggc cccagatcaa 1150
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 gcaacaggga gggggagatt tcatcagtgt ggacagcctg tcaacttagg 1250
 atggatggct gagagggctt cctaggagcc agtcagcagg gtgggggtggg 1300
 gccagaggag ctctccagcc ctgcctagtg ggcgccctga gcccttgtc 1350
 gtgtgctgag catggcatga ggctgaagtg gcaaccctgg ggtctttgat 1400
 gtcttgacag attgaccatc tgtctccagc caggccaccc ctttccaaaa 1450
 ttccctcttc tgccagtact cccctgtac caccattgc tgatggcaca 1500
 cccatcctta agctaagaca ggacgattgt ggtcctccca cactaaggcc 1550
 acagcccatc cgcgtgctgt gtgtccctct tccaccccaa cccctgctgg 1600
 ctctctggtg agcatccatg tcccggagag gggccctca acagtcagcc 1650
 tcacctgtca gaccgggggt ctcccggatc tggatggcgc cgccctctca 1700
 gcagcgggca cgggtggggc ggggccgggc cgcagagcat gtgtggatc 1750
 tgttctgtgt gtctgtctgt ggggtggggg aggggagga agtcttgtga 1800
 aaccgctgat tgctgacttt tgtgtgaaga atcgtgttct tggagcagga 1850
 aataaagctt gccccggggc a 1871

<210> 218

<211> 252

<212> PRT

<213> Homo sapiens

<400> 218

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Leu | Thr | Arg | Cys | Cys | Phe | Val | Phe | Leu | Val | Gln | Gly | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Leu | Val | Ile | Cys | Gly | Gln | Asp | Asp | Gly | Pro | Pro | Gly | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Pro | Glu | Arg | Asp | Asp | His | Glu | Gly | Gln | Pro | Arg | Pro | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Pro | Arg | Lys | Arg | Gly | His | Ile | Ser | Pro | Lys | Ser | Arg | Pro | Met | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ala | Asn | Ser | Thr | Leu | Leu | Gly | Leu | Leu | Ala | Pro | Pro | Gly | Glu | Ala | |
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| Trp | Gly | Ile | Leu | Gly | Gln | Pro | Pro | Asn | Arg | Pro | Asn | His | Ser | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Pro | Pro | Ser | Ala | Lys | Val | Lys | Lys | Ile | Phe | Gly | Trp | Gly | Asp | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Tyr | Ser | Asn | Ile | Lys | Thr | Val | Ala | Leu | Asn | Leu | Leu | Val | Thr | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Ile | Val | Asp | His | Gly | Asn | Gly | Thr | Phe | Ser | Val | His | Phe | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Asn | Ala | Thr | Gly | Gln | Gly | Asn | Ile | Ser | Ile | Ser | Leu | Val | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Ser | Lys | Ala | Val | Glu | Phe | His | Gln | Glu | Gln | Gln | Ile | Phe | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Ala | Lys | Ala | Ser | Lys | Ile | Phe | Asn | Cys | Arg | Met | Glu | Trp | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Val | Glu | Arg | Gly | Arg | Arg | Thr | Ser | Leu | Cys | Thr | His | Asp | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Lys | Ile | Cys | Ser | Arg | Asp | His | Ala | Gln | Ser | Ser | Ala | Thr | Trp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Cys | Ser | Gln | Pro | Phe | Lys | Val | Val | Cys | Val | Tyr | Ile | Ala | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Ser | Thr | Asp | Tyr | Arg | Leu | Val | Gln | Lys | Val | Cys | Pro | Asp | Tyr | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asn | Tyr | His | Ser | Asp | Thr | Pro | Tyr | Tyr | Pro | Ser | Gly | | | | |
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<213> Homo sapiens

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agctcgaggg gagactttga cttcaagcca cagaattggg ggaagtgtgc 200

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 35 40 45
 Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
 50 55 60
 Gly Ile Ser Val Arg Ala Ala Asn Ser Lys Val Ala Phe Ser Ala
 65 70 75
 Val Arg Ser Thr Asn His Glu Pro Ser Glu Met Ser Asn Lys Thr
 80 85 90
 Arg Ile Ile Tyr Phe Asp Gln Ile Leu Val Asn Val Gly Asn Phe
 95 100 105
 Phe Thr Leu Glu Ser Val Phe Val Ala Pro Arg Lys Gly Ile Tyr
 110 115 120
 Ser Phe Ser Phe His Val Ile Lys Val Tyr Gln Ser Gln Thr Ile
 125 130 135
 Gln Val Asn Leu Met Leu Asn Gly Lys Pro Val Ile Ser Ala Phe
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 Ala Gly Asp Lys Asp Val Thr Arg Glu Ala Ala Thr Asn Gly Val
 155 160 165

Leu Leu Tyr Leu Asp Lys Glu Asp Lys Val Tyr Leu Lys Leu Glu
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Phe Leu Val Phe Pro Leu
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<210> 222

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 222

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<210> 223

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<211> 902

<212> DNA

<213> Homo sapiens

<400> 224

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tttcgtccct tgtttggttc atggcaagag tcattattga caacaaagat 200

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<210> 225

<211> 257

<212> PRT

<213> Homo sapiens

<400> 225

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ala | Ala | Val | Phe | Phe | Gly | Cys | Ala | Phe | Ile | Ala | Phe | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Ala | Leu | Ala | Leu | Tyr | Val | Phe | Thr | Ile | Ala | Ile | Glu | Pro | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Ile | Ile | Phe | Leu | Ile | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Ile | Ser | Ser | Leu | Val | Trp | Phe | Met | Ala | Arg | Val | Ile | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Asn | Lys | Asp | Gly | Pro | Thr | Gln | Lys | Tyr | Leu | Leu | Ile | Phe | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Phe | Val | Ser | Val | Tyr | Ile | Gln | Glu | Met | Phe | Arg | Phe | Ala | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Ser | Glu | Gly | Leu | Lys | Ser | Ile | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Gly | Glu | Thr | Ala | Pro | Ser | Met | Arg | Leu | Leu | Ala | Tyr | Val | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Gly | Phe | Gly | Ile | Met | Ser | Gly | Val | Phe | Ser | Phe | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Leu | Ser | Asp | Ser | Leu | Gly | Pro | Gly | Thr | Val | Gly | Ile | His | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Ser | Pro | Gln | Phe | Phe | Leu | Tyr | Ser | Ala | Phe | Met | Thr | Leu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Ile | Leu | Leu | His | Val | Phe | Trp | Gly | Ile | Val | Phe | Phe | Asp | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Glu | Lys | Lys | Lys | Trp | Gly | Ile | Leu | Leu | Ile | Val | Leu | Leu | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| His | Leu | Leu | Val | Ser | Ala | Gln | Thr | Phe | Ile | Ser | Ser | Tyr | Tyr | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Asn | Leu | Ala | Ser | Ala | Phe | Ile | Ile | Leu | Val | Leu | Met | Gly | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Trp | Ala | Phe | Leu | Ala | Ala | Gly | Gly | Ser | Cys | Arg | Ser | Leu | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Leu | Leu | Cys | Gln | Asp | Lys | Asn | Phe | Leu | Leu | Tyr | Asn | Gln | Arg | |
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Ser Arg

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<211> 3939

<212> DNA

<213> Homo sapiens

<400> 226

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<211> 832

<212> PRT

<213> Homo sapiens

<400> 227

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| Met | Phe | Ala | Leu | Gly | Leu | Pro | Phe | Leu | Val | Leu | Leu | Val | Ala | Ser | 1 | 5 | 10 | 15 |
| Val | Glu | Ser | His | Leu | Gly | Val | Leu | Gly | Pro | Lys | Asn | Val | Ser | Gln | 20 | 25 | 30 | |
| Lys | Asp | Ala | Glu | Phe | Glu | Arg | Thr | Tyr | Val | Asp | Glu | Val | Asn | Ser | 35 | 40 | 45 | |
| Glu | Leu | Val | Asn | Ile | Tyr | Thr | Phe | Asn | His | Thr | Val | Thr | Arg | Asn | 50 | 55 | 60 | |
| Arg | Thr | Glu | Gly | Val | Arg | Val | Ser | Val | Asn | Val | Leu | Asn | Lys | Gln | 65 | 70 | 75 | |
| Lys | Gly | Ala | Pro | Leu | Leu | Phe | Val | Val | Arg | Gln | Lys | Glu | Ala | Val | 80 | 85 | 90 | |
| Val | Ser | Phe | Gln | Val | Pro | Leu | Ile | Leu | Arg | Gly | Met | Phe | Gln | Arg | 95 | 100 | 105 | |
| Lys | Tyr | Leu | Tyr | Gln | Lys | Val | Glu | Arg | Thr | Leu | Cys | Gln | Pro | Pro | 110 | 115 | 120 | |
| Thr | Lys | Asn | Glu | Ser | Glu | Ile | Gln | Phe | Phe | Tyr | Val | Asp | Val | Ser | | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 125 | | 130 | | 135 |
| Thr Leu Ser Pro | Val Asn Thr Thr Tyr | Gln Leu Arg Val Ser Arg | | | |
| | 140 | 145 | | 150 | |
| Met Asp Asp Phe | Val Leu Arg Thr Gly | Glu Gln Phe Ser Phe Asn | | | |
| | 155 | 160 | | 165 | |
| Thr Thr Ala Ala | Gln Pro Gln Tyr Phe | Lys Tyr Glu Phe Pro Glu | | | |
| | 170 | 175 | | 180 | |
| Gly Val Asp Ser | Val Ile Val Lys Val | Thr Ser Asn Lys Ala Phe | | | |
| | 185 | 190 | | 195 | |
| Pro Cys Ser Val | Ile Ser Ile Gln Asp | Val Leu Cys Pro Val Tyr | | | |
| | 200 | 205 | | 210 | |
| Asp Leu Asp Asn | Asn Val Ala Phe Ile | Gly Met Tyr Gln Thr Met | | | |
| | 215 | 220 | | 225 | |
| Thr Lys Lys Ala | Ala Ile Thr Val Gln | Arg Lys Asp Phe Pro Ser | | | |
| | 230 | 235 | | 240 | |
| Asn Ser Phe Tyr | Val Val Val Val Val | Lys Thr Glu Asp Gln Ala | | | |
| | 245 | 250 | | 255 | |
| Cys Gly Gly Ser | Leu Pro Phe Tyr Pro | Phe Ala Glu Asp Glu Pro | | | |
| | 260 | 265 | | 270 | |
| Val Asp Gln Gly | His Arg Gln Lys Thr | Leu Ser Val Leu Val Ser | | | |
| | 275 | 280 | | 285 | |
| Gln Ala Val Thr | Ser Glu Ala Tyr Val | Ser Gly Met Leu Phe Cys | | | |
| | 290 | 295 | | 300 | |
| Leu Gly Ile Phe | Leu Ser Phe Tyr Leu | Leu Thr Val Leu Leu Ala | | | |
| | 305 | 310 | | 315 | |
| Cys Trp Glu Asn | Trp Arg Gln Lys Lys | Lys Thr Leu Leu Val Ala | | | |
| | 320 | 325 | | 330 | |
| Ile Asp Arg Ala | Cys Pro Glu Ser Gly | His Pro Arg Val Leu Ala | | | |
| | 335 | 340 | | 345 | |
| Asp Ser Phe Pro | Gly Ser Ser Pro Tyr | Glu Gly Tyr Asn Tyr Gly | | | |
| | 350 | 355 | | 360 | |
| Ser Phe Glu Asn | Val Ser Gly Ser Thr | Asp Gly Leu Val Asp Ser | | | |
| | 365 | 370 | | 375 | |
| Ala Gly Thr Gly | Asp Leu Ser Tyr Gly | Tyr Gln Gly Arg Ser Phe | | | |
| | 380 | 385 | | 390 | |
| Glu Pro Val Gly | Thr Arg Pro Arg Val | Asp Ser Met Ser Ser Val | | | |
| | 395 | 400 | | 405 | |
| Glu Glu Asp Asp | Tyr Asp Thr Leu Thr | Asp Ile Asp Ser Asp Lys | | | |

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| Met Lys Leu Arg | Ser Gly Glu Arg Ile | Lys Leu Ile Pro Leu | Leu |
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| Cys Ile Val Cys | Thr Ser Val Val Trp | Gly Phe Ala Leu Phe | Phe |
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| Phe Phe Gln Gly | Leu Ser Thr Trp Gln | Lys Thr Pro Ala Glu | Ser |
| | 770 | 775 | 780 |
| Arg Glu His Asn | Arg Asp Cys Ile Leu | Leu Asp Phe Phe Asp | Asp |
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| His Asp Ile Trp | His Phe Leu Ser Ser | Ile Ala Met Phe Gly | Ser |
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| Phe Leu Val Leu | Leu Thr Leu Asp Asp | Asp Leu Asp Thr Val | Gln |
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| Ala | Leu | Pro | Lys | Ala | Gln | Pro | Ala | Glu | Leu | Ser | Val | Glu | Val | Pro |
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| Glu | Asn | Tyr | Gly | Gly | Asn | Phe | Pro | Leu | Tyr | Leu | Thr | Lys | Leu | Pro |
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| Leu | Pro | Arg | Glu | Gly | Ala | Glu | Gly | Gln | Ile | Val | Leu | Ser | Gly | Asp |
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| Ser | Gly | Lys | Ala | Thr | Glu | Gly | Pro | Phe | Ala | Met | Asp | Pro | Asp | Ser |
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| Gly | Phe | Leu | Leu | Val | Thr | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Gln | Ala |

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
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| Leu | Trp | Gly | Pro | Gln | Pro | Val | Leu | Val | His | Val | Lys | Asp | Glu | Asn | | | | | |
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| Ser | Arg | Gly | Thr | Arg | Pro | Gly | Ile | Pro | Phe | Leu | Phe | Leu | Glu | Ala | | | | | |
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| Ser | Asp | Arg | Asp | Glu | Pro | Gly | Thr | Ala | Asn | Ser | Asp | Leu | Arg | Phe | | | | | |
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| Val | Gln | Val | Lys | Asp | Met | Gly | Asp | Gln | Ala | Ser | Gly | His | Gln | Ala | | | | | |
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| Leu | Glu | Pro | Ile | His | Leu | Ala | Glu | Asn | Leu | Lys | Val | Leu | Tyr | Pro | | | | | |
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| His | His | Met | Ala | Gln | Val | His | Trp | Ser | Gly | Gly | Asp | Val | His | Tyr | | | | | |
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| His | Leu | Glu | Ser | His | Pro | Pro | Gly | Pro | Phe | Glu | Val | Asn | Ala | Glu | | | | | |
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| Gly | Asn | Leu | Tyr | Val | Thr | Arg | Glu | Leu | Asp | Arg | Glu | Ala | Gln | Ala | | | | | |
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| Tyr | Ala | Ala | Pro | Leu | Glu | Leu | His | Val | Leu | Val | Met | Asp | Glu | Asn | | | | | |
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| Asp | Asn | Val | Pro | Ile | Cys | Pro | Pro | Arg | Asp | Pro | Thr | Val | Ser | Ile | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
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| Glu | Asp | Ala | Asp | Ala | Pro | Gly | Ser | Pro | Asn | Ser | His | Val | Val | Tyr | | | | | |

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| Pro | Leu | Arg | Ala | Gly | Gln | Asn | Ile | Leu | Leu | Leu | Val | Leu | Ala | Met |
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| Asp | Leu | Ala | Gly | Ala | Glu | Gly | Gly | Phe | Ser | Ser | Thr | Cys | Glu | Val |
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| Thr | Tyr | Thr | Val | Leu | Val | Glu | Ala | Gln | Asp | Thr | Ala | Leu | Thr | Leu |
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| | 695 | | 700 | | 705 |
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| Pro Val Val Val | Ser His Asn Ala Gln | Met Trp Gln Leu Leu | Val | | |
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<210> 234

<211> 421

<212> PRT

<213> Homo sapiens

<400> 234

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Trp | Ile | Leu | Phe | Ile | Gly | Ala | Leu | Ile | Gly | Ser | Ser | Ile | 1 | 5 | 10 | 15 |
| Cys | Gly | Gln | Glu | Lys | Phe | Phe | Gly | Asp | Gln | Val | Leu | Arg | Ile | Asn | 20 | 25 | 30 | |
| Val | Arg | Asn | Gly | Asp | Glu | Ile | Ser | Lys | Leu | Ser | Gln | Leu | Val | Asn | 35 | 40 | 45 | |
| Ser | Asn | Asn | Leu | Lys | Leu | Asn | Phe | Trp | Lys | Ser | Pro | Ser | Ser | Phe | 50 | 55 | 60 | |
| Asn | Arg | Pro | Val | Asp | Val | Leu | Val | Pro | Ser | Val | Ser | Leu | Gln | Ala | 65 | 70 | 75 | |
| Phe | Lys | Ser | Phe | Leu | Arg | Ser | Gln | Gly | Leu | Glu | Tyr | Ala | Val | Thr | 80 | 85 | 90 | |
| Ile | Glu | Asp | Leu | Gln | Ala | Leu | Leu | Asp | Asn | Glu | Asp | Asp | Glu | Met | 95 | 100 | 105 | |
| Gln | His | Asn | Glu | Gly | Gln | Glu | Arg | Ser | Ser | Asn | Asn | Phe | Asn | Tyr | 110 | 115 | 120 | |
| Gly | Ala | Tyr | His | Ser | Leu | Glu | Ala | Ile | Tyr | His | Glu | Met | Asp | Asn | 125 | 130 | 135 | |
| Ile | Ala | Ala | Asp | Phe | Pro | Asp | Leu | Ala | Arg | Arg | Val | Lys | Ile | Gly | 140 | 145 | 150 | |
| His | Ser | Phe | Glu | Asn | Arg | Pro | Met | Tyr | Val | Leu | Lys | Phe | Ser | Thr | 155 | 160 | 165 | |
| Gly | Lys | Gly | Val | Arg | Arg | Pro | Ala | Val | Trp | Leu | Asn | Ala | Gly | Ile | 170 | 175 | 180 | |
| His | Ser | Arg | Glu | Trp | Ile | Ser | Gln | Ala | Thr | Ala | Ile | Trp | Thr | Ala | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Lys | Ile | Val | Ser | Asp | Tyr | Gln | Arg | Asp | Pro | Ala | Ile | Thr | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Leu | Glu | Lys | Met | Asp | Ile | Phe | Leu | Leu | Pro | Val | Ala | Asn | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Gly | Tyr | Val | Tyr | Thr | Gln | Thr | Gln | Asn | Arg | Leu | Trp | Arg | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Arg | Ser | Arg | Asn | Pro | Gly | Ser | Ser | Cys | Ile | Gly | Ala | Asp | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Arg | Asn | Trp | Asn | Ala | Ser | Phe | Ala | Gly | Lys | Gly | Ala | Ser | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asn | Pro | Cys | Ser | Glu | Val | Tyr | His | Gly | Pro | His | Ala | Asn | Ser | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Val | Glu | Val | Lys | Ser | Val | Val | Asp | Phe | Ile | Gln | Lys | His | Gly | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Phe | Lys | Gly | Phe | Ile | Asp | Leu | His | Ser | Tyr | Ser | Gln | Leu | Leu | Met | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Tyr | Pro | Tyr | Gly | Tyr | Ser | Val | Lys | Lys | Ala | Pro | Asp | Ala | Glu | Glu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Asp | Lys | Val | Ala | Arg | Leu | Ala | Ala | Lys | Ala | Leu | Ala | Ser | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ser | Gly | Thr | Glu | Tyr | Gln | Val | Gly | Pro | Thr | Cys | Thr | Thr | Val | Tyr | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Pro | Ala | Ser | Gly | Ser | Ser | Ile | Asp | Trp | Ala | Tyr | Asp | Asn | Gly | Ile | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Lys | Phe | Ala | Phe | Thr | Phe | Glu | Leu | Arg | Asp | Thr | Gly | Thr | Tyr | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Phe | Leu | Leu | Pro | Ala | Asn | Gln | Ile | Ile | Pro | Thr | Ala | Glu | Glu | Thr | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Trp | Leu | Gly | Leu | Lys | Thr | Ile | Met | Glu | His | Val | Arg | Asp | Asn | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |

Tyr

<210> 235

<211> 1743

<212> DNA

<213> Homo sapiens

<400> 235

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cccgcccttc ctccacaaag agcacccttg cctcacaggt gtattccctc 200
aacaccgact ttgccttccg cctataccgc aggctggttt tggagacccc 250
gagtcagaac atcttcttct cccctgtgag tgtctccact tccctggcca 300
tgctctccct tggggcccac tcagtcacca agaccagat tctccagggc 350
ctgggcttca acctcacaca cacaccagag tctgccatcc accagggtt 400
ccagcacctg gttcactcac tgactgttcc cagcaaagac ctgaccttga 450
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<210> 236

<211> 417

<212> PRT

<213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ser | Tyr | Leu | Tyr | Gly | Val | Leu | Phe | Ala | Val | Gly | Leu | Cys | 1 | 5 | 10 | 15 |
| Ala | Pro | Ile | Tyr | Cys | Val | Ser | Pro | Ala | Asn | Ala | Pro | Ser | Ala | Tyr | 20 | 25 | 30 | |
| Pro | Arg | Pro | Ser | Ser | Thr | Lys | Ser | Thr | Pro | Ala | Ser | Gln | Val | Tyr | 35 | 40 | 45 | |
| Ser | Leu | Asn | Thr | Asp | Phe | Ala | Phe | Arg | Leu | Tyr | Arg | Arg | Leu | Val | 50 | 55 | 60 | |
| Leu | Glu | Thr | Pro | Ser | Gln | Asn | Ile | Phe | Phe | Ser | Pro | Val | Ser | Val | 65 | 70 | 75 | |
| Ser | Thr | Ser | Leu | Ala | Met | Leu | Ser | Leu | Gly | Ala | His | Ser | Val | Thr | 80 | 85 | 90 | |
| Lys | Thr | Gln | Ile | Leu | Gln | Gly | Leu | Gly | Phe | Asn | Leu | Thr | His | Thr | 95 | 100 | 105 | |
| Pro | Glu | Ser | Ala | Ile | His | Gln | Gly | Phe | Gln | His | Leu | Val | His | Ser | 110 | 115 | 120 | |
| Leu | Thr | Val | Pro | Ser | Lys | Asp | Leu | Thr | Leu | Lys | Met | Gly | Ser | Ala | 125 | 130 | 135 | |
| Leu | Phe | Val | Lys | Lys | Glu | Leu | Gln | Leu | Gln | Ala | Asn | Phe | Leu | Gly | 140 | 145 | 150 | |
| Asn | Val | Lys | Arg | Leu | Tyr | Glu | Ala | Glu | Val | Phe | Ser | Thr | Asp | Phe | 155 | 160 | 165 | |
| Ser | Asn | Pro | Ser | Ile | Ala | Gln | Ala | Arg | Ile | Asn | Ser | His | Val | Lys | 170 | 175 | 180 | |
| Lys | Lys | Thr | Gln | Gly | Lys | Val | Val | Asp | Ile | Ile | Gln | Gly | Leu | Asp | 185 | 190 | 195 | |
| Leu | Leu | Thr | Ala | Met | Val | Leu | Val | Asn | His | Ile | Phe | Phe | Lys | Ala | 200 | 205 | 210 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Lys Trp Glu Lys | Pro Phe His Leu Glu | Tyr Thr Arg Lys Asn | Phe |
| | 215 | 220 | 225 |
| Pro Phe Leu Val | Gly Glu Gln Val Thr | Val Gln Val Pro Met | Met |
| | 230 | 235 | 240 |
| His Gln Lys Glu | Gln Phe Ala Phe Gly | Val Asp Thr Glu Leu | Asn |
| | 245 | 250 | 255 |
| Cys Phe Val Leu | Gln Met Asp Tyr Lys | Gly Asp Ala Val Ala | Phe |
| | 260 | 265 | 270 |
| Phe Val Leu Pro | Ser Lys Gly Lys Met | Arg Gln Leu Glu Gln | Ala |
| | 275 | 280 | 285 |
| Leu Ser Ala Arg | Thr Leu Ile Lys Trp | Ser His Ser Leu Gln | Lys |
| | 290 | 295 | 300 |
| Arg Trp Ile Glu | Val Phe Ile Pro Arg | Phe Ser Ile Ser Ala | Ser |
| | 305 | 310 | 315 |
| Tyr Asn Leu Glu | Thr Ile Leu Pro Lys | Met Gly Ile Gln Asn | Ala |
| | 320 | 325 | 330 |
| Phe Asp Lys Asn | Ala Asp Phe Ser Gly | Ile Ala Lys Arg Asp | Ser |
| | 335 | 340 | 345 |
| Leu Gln Val Ser | Lys Ala Thr His Lys | Ala Val Leu Asp Val | Ser |
| | 350 | 355 | 360 |
| Glu Glu Gly Thr | Glu Ala Thr Ala Ala | Thr Thr Thr Lys Phe | Ile |
| | 365 | 370 | 375 |
| Val Arg Ser Lys | Asp Gly Pro Ser Tyr | Phe Thr Val Ser Phe | Asn |
| | 380 | 385 | 390 |
| Arg Thr Phe Leu | Met Met Ile Thr Asn | Lys Ala Thr Asp Gly | Ile |
| | 395 | 400 | 405 |
| Leu Phe Leu Gly | Lys Val Glu Asn Pro | Thr Lys Ser | |
| | 410 | 415 | |

<210> 237

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

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<210> 238

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 238

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<210> 239

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 239

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<210> 240

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 240

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<210> 241

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 241

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<210> 242

<211> 2436

<212> DNA

<213> Homo sapiens

<400> 242

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<210> 243

<211> 596

<212> PRT

<213> Homo sapiens

<400> 243

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Met | Gln | Lys | Gly | Asn | Val | Leu | Leu | Met | Phe | Gly | Leu | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Leu | His | Leu | Glu | Ala | Ala | Thr | Asn | Ser | Asn | Glu | Thr | Ser | Thr | Ser |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Ala | Asn | Thr | Gly | Ser | Ser | Val | Ile | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 35 | | | | 40 | | | | | 45 | |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ser | Gly | Val | Ser | Thr | Ala |
| | | | | 50 | | | | 55 | | | | | 60 | |
| Thr | Ile | Ser | Gly | Ser | Ser | Val | Thr | Ser | Asn | Gly | Val | Ser | Ile | Val |
| | | | | 65 | | | | 70 | | | | | 75 | |
| Thr | Asn | Ser | Glu | Phe | His | Thr | Thr | Ser | Ser | Gly | Ile | Ser | Thr | Ala |
| | | | | 80 | | | | 85 | | | | | 90 | |
| Thr | Asn | Ser | Glu | Phe | Ser | Thr | Ala | Ser | Ser | Gly | Ile | Ser | Ile | Ala |
| | | | | 95 | | | | 100 | | | | | 105 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 110 | 115 | 120 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Gly | Ala | Ser | Thr | Val | 125 | 130 | 135 |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 140 | 145 | 150 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Arg | Ala | Ser | Thr | Ala | 155 | 160 | 165 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Leu | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 170 | 175 | 180 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 185 | 190 | 195 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 200 | 205 | 210 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Arg | Ala | Ser | Thr | Ala | 215 | 220 | 225 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 230 | 235 | 240 |
| Thr | Asn | Ser | Glu | Ser | Arg | Thr | Thr | Ser | Asn | Gly | Ala | Gly | Thr | Ala | 245 | 250 | 255 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 260 | 265 | 270 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 275 | 280 | 285 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 290 | 295 | 300 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 305 | 310 | 315 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Gly | Thr | Ala | 320 | 325 | 330 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ile | Ser | Thr | Val | 335 | 340 | 345 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Gly | Ala | Asn | Thr | Ala | 350 | 355 | 360 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Asn | Thr | Ala | 365 | 370 | 375 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ala | Ser | Thr | Ala | 380 | 385 | 390 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Val | Ser | Thr | Ala |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Glu | Ala | Ser | Thr | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ile | Ser | Thr | Val |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Asn | Thr | Ala |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ala | Gly | Ser | Gly | Thr | Ala |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ala | Leu | Thr | Gly | Met | His | Thr | Thr | Ser | His | Ser | Ala | Ser | Thr | Ala |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Val | Ser | Glu | Ala | Lys | Pro | Gly | Gly | Ser | Leu | Val | Pro | Trp | Glu | Ile |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Phe | Leu | Ile | Thr | Leu | Val | Ser | Val | Val | Ala | Ala | Val | Gly | Leu | Phe |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Ala | Gly | Leu | Phe | Phe | Cys | Val | Arg | Asn | Ser | Leu | Ser | Leu | Arg | Asn |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Thr | Phe | Asn | Thr | Ala | Val | Tyr | His | Pro | His | Gly | Leu | Asn | His | Gly |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Gly | Pro | Gly | Pro | Gly | Gly | Asn | His | Gly | Ala | Pro | His | Arg | Pro |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Arg | Trp | Ser | Pro | Asn | Trp | Phe | Trp | Arg | Arg | Pro | Val | Ser | Ser | Ile |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Ala | Met | Glu | Met | Ser | Gly | Arg | Asn | Ser | Gly | Pro | | | | |
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<211> 26

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<223> Synthetic oligonucleotide probe

<400> 244

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<210> 245

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 245

gtcagagttg gtggctgtgc tagc 24

<210> 246

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 246

ggaccaggc atcttgcttt ccagccacaa agagacagat gaagatgc 48

<210> 247

<211> 957

<212> DNA

<213> Homo sapiens

<400> 247

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ttcccgacct tcccagcaat atgcatcttg cacgtctggt cggctcctgc 100

tccctccttc tgctactggg ggccctgtct ggatgggcgg ccagcgatga 150

ccccattgag aaggtcattg aagggatcaa ccgagggctg agcaatgcag 200

agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250

gccggaaggg aagtggagaa ggttttcaac ggacttagca acatggggag 300

ccacaccggc aaggagttag acaaaggcgt ccaggggctc aaccacggca 350

tggacaaggt tgcccatgag atcaaccatg gtattggaca agcaggaaag 400

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<210> 248
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 <212> PRT
 <213> Homo sapiens

<400> 248

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | His | Leu | Ala | Arg | Leu | Val | Gly | Ser | Cys | Ser | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Ala | Leu | Ser | Gly | Trp | Ala | Ala | Ser | Asp | Asp | Pro | Ile | Glu | 20 | 25 | 30 | |
| Lys | Val | Ile | Glu | Gly | Ile | Asn | Arg | Gly | Leu | Ser | Asn | Ala | Glu | Arg | 35 | 40 | 45 | |
| Glu | Val | Gly | Lys | Ala | Leu | Asp | Gly | Ile | Asn | Ser | Gly | Ile | Thr | His | 50 | 55 | 60 | |
| Ala | Gly | Arg | Glu | Val | Glu | Lys | Val | Phe | Asn | Gly | Leu | Ser | Asn | Met | 65 | 70 | 75 | |
| Gly | Ser | His | Thr | Gly | Lys | Glu | Leu | Asp | Lys | Gly | Val | Gln | Gly | Leu | 80 | 85 | 90 | |
| Asn | His | Gly | Met | Asp | Lys | Val | Ala | His | Glu | Ile | Asn | His | Gly | Ile | 95 | 100 | 105 | |
| Gly | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | Leu | Gly | His | Gly | Val | Asn | 110 | 115 | 120 | |
| Asn | Ala | Ala | Gly | Gln | Ala | Gly | Lys | Glu | Ala | Asp | Lys | Ala | Val | Gln | 125 | 130 | 135 | |
| Gly | Phe | His | Thr | Gly | Val | His | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | 140 | 145 | 150 | |
| Leu | Gly | Gln | Gly | Val | Asn | His | Ala | Ala | Asp | Gln | Ala | Gly | Lys | Glu | 155 | 160 | 165 | |
| Val | Glu | Lys | Leu | Gly | Gln | Gly | Ala | His | His | Ala | Ala | Gly | Gln | Ala | 170 | 175 | 180 | |
| Gly | Lys | Glu | Leu | Gln | Asn | Ala | His | Asn | Gly | Val | Asn | Gln | Ala | Ser | 185 | 190 | 195 | |
| Lys | Glu | Ala | Asn | Gln | Leu | Leu | Asn | Gly | Asn | His | Gln | Ser | Gly | Ser | 200 | 205 | 210 | |
| Ser | Ser | His | Gln | Gly | Gly | Ala | Thr | Thr | Thr | Pro | Leu | Ala | Ser | Gly | | | | |

| | | | |
|---|-----|-----|-----|
| | 215 | 220 | 225 |
| Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu Trp Arg | | | |
| | 230 | 235 | 240 |
| Ser Val Ala Asn Ile Met Pro | | | |
| | 245 | | |

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 <223> Synthetic oligonucleotide probe

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<210> 250
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<220>
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<400> 250
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<211> 837

<212> PRT

<213> Homo sapiens

<400> 253

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| Met | Leu | Arg | Thr | Ala | Met | Gly | Leu | Arg | Ser | Trp | Leu | Ala | Ala | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Gly | Ala | Leu | Pro | Pro | Arg | Pro | Pro | Leu | Leu | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Pro | Pro | Thr | Trp | Ala | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Ile | Ser | Leu | Pro | Leu | Gly | Ser | Glu | Glu | Arg | Pro | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Phe | Glu | Ala | Glu | His | Ile | Ser | Asn | Tyr | Thr | Ala | Leu | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Arg | Asp | Gly | Arg | Thr | Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Ala | Leu | Ser | Ser | Asn | Leu | Ser | Phe | Leu | Pro | Gly | Gly | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Glu | Leu | Leu | Trp | Gly | Ala | Asp | Ala | Glu | Lys | Lys | Gln | Gln | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ser Phe Lys Gly | Lys Asp Pro Gln Arg | Asp Cys Gln Asn Tyr | Ile |
| 125 | | 130 | 135 |
| Lys Ile Leu Leu | Pro Leu Ser Gly Ser | His Leu Phe Thr Cys | Gly |
| 140 | | 145 | 150 |
| Thr Ala Ala Phe | Ser Pro Met Cys Thr | Tyr Ile Asn Met Glu | Asn |
| 155 | | 160 | 165 |
| Phe Thr Leu Ala | Arg Asp Glu Lys Gly | Asn Val Leu Leu Glu | Asp |
| 170 | | 175 | 180 |
| Gly Lys Gly Arg | Cys Pro Phe Asp Pro | Asn Phe Lys Ser Thr | Ala |
| 185 | | 190 | 195 |
| Leu Val Val Asp | Gly Glu Leu Tyr Thr | Gly Thr Val Ser Ser | Phe |
| 200 | | 205 | 210 |
| Gln Gly Asn Asp | Pro Ala Ile Ser Arg | Ser Gln Ser Leu Arg | Pro |
| 215 | | 220 | 225 |
| Thr Lys Thr Glu | Ser Ser Leu Asn Trp | Leu Gln Asp Pro Ala | Phe |
| 230 | | 235 | 240 |
| Val Ala Ser Ala | Tyr Ile Pro Glu Ser | Leu Gly Ser Leu Gln | Gly |
| 245 | | 250 | 255 |
| Asp Asp Asp Lys | Ile Tyr Phe Phe Phe | Ser Glu Thr Gly Gln | Glu |
| 260 | | 265 | 270 |
| Phe Glu Phe Phe | Glu Asn Thr Ile Val | Ser Arg Ile Ala Arg | Ile |
| 275 | | 280 | 285 |
| Cys Lys Gly Asp | Glu Gly Gly Glu Arg | Val Leu Gln Gln Arg | Trp |
| 290 | | 295 | 300 |
| Thr Ser Phe Leu | Lys Ala Gln Leu Leu | Cys Ser Arg Pro Asp | Asp |
| 305 | | 310 | 315 |
| Gly Phe Pro Phe | Asn Val Leu Gln Asp | Val Phe Thr Leu Ser | Pro |
| 320 | | 325 | 330 |
| Ser Pro Gln Asp | Trp Arg Asp Thr Leu | Phe Tyr Gly Val Phe | Thr |
| 335 | | 340 | 345 |
| Ser Gln Trp His | Arg Gly Thr Thr Glu | Gly Ser Ala Val Cys | Val |
| 350 | | 355 | 360 |
| Phe Thr Met Lys | Asp Val Gln Arg Val | Phe Ser Gly Leu Tyr | Lys |
| 365 | | 370 | 375 |
| Glu Val Asn Arg | Glu Thr Gln Gln Trp | Tyr Thr Val Thr His | Pro |
| 380 | | 385 | 390 |
| Val Pro Thr Pro | Arg Pro Gly Ala Cys | Ile Thr Asn Ser Ala | Arg |
| 395 | | 400 | 405 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Glu Arg Lys Ile | Asn Ser Ser Leu Gln | Leu Pro Asp Arg Val | Leu |
| | 410 | 415 | 420 |
| Asn Phe Leu Lys | Asp His Phe Leu Met | Asp Gly Gln Val Arg | Ser |
| | 425 | 430 | 435 |
| Arg Met Leu Leu | Leu Gln Pro Gln Ala | Arg Tyr Gln Arg Val | Ala |
| | 440 | 445 | 450 |
| Val His Arg Val | Pro Gly Leu His His | Thr Tyr Asp Val Leu | Phe |
| | 455 | 460 | 465 |
| Leu Gly Thr Gly | Asp Gly Arg Leu His | Lys Ala Val Ser Val | Gly |
| | 470 | 475 | 480 |
| Pro Arg Val His | Ile Ile Glu Glu Leu | Gln Ile Phe Ser Ser | Gly |
| | 485 | 490 | 495 |
| Gln Pro Val Gln | Asn Leu Leu Leu Asp | Thr His Arg Gly Leu | Leu |
| | 500 | 505 | 510 |
| Tyr Ala Ala Ser | His Ser Gly Val Val | Gln Val Pro Met Ala | Asn |
| | 515 | 520 | 525 |
| Cys Ser Leu Tyr | Arg Ser Cys Gly Asp | Cys Leu Leu Ala Arg | Asp |
| | 530 | 535 | 540 |
| Pro Tyr Cys Ala | Trp Ser Gly Ser Ser | Cys Lys His Val Ser | Leu |
| | 545 | 550 | 555 |
| Tyr Gln Pro Gln | Leu Ala Thr Arg Pro | Trp Ile Gln Asp Ile | Glu |
| | 560 | 565 | 570 |
| Gly Ala Ser Ala | Lys Asp Leu Cys Ser | Ala Ser Ser Val Val | Ser |
| | 575 | 580 | 585 |
| Pro Ser Phe Val | Pro Thr Gly Glu Lys | Pro Cys Glu Gln Val | Gln |
| | 590 | 595 | 600 |
| Phe Gln Pro Asn | Thr Val Asn Thr Leu | Ala Cys Pro Leu Leu | Ser |
| | 605 | 610 | 615 |
| Asn Leu Ala Thr | Arg Leu Trp Leu Arg | Asn Gly Ala Pro Val | Asn |
| | 620 | 625 | 630 |
| Ala Ser Ala Ser | Cys His Val Leu Pro | Thr Gly Asp Leu Leu | Leu |
| | 635 | 640 | 645 |
| Val Gly Thr Gln | Gln Leu Gly Glu Phe | Gln Cys Trp Ser Leu | Glu |
| | 650 | 655 | 660 |
| Glu Gly Phe Gln | Gln Leu Val Ala Ser | Tyr Cys Pro Glu Val | Val |
| | 665 | 670 | 675 |
| Glu Asp Gly Val | Ala Asp Gln Thr Asp | Glu Gly Gly Ser Val | Pro |
| | 680 | 685 | 690 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Ile | Ile | Ser | Thr | Ser | Arg | Val | Ser | Ala | Pro | Ala | Gly | Gly | Lys | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Ser | Trp | Gly | Ala | Asp | Arg | Ser | Tyr | Trp | Lys | Glu | Phe | Leu | Val | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Met | Cys | Thr | Leu | Phe | Val | Leu | Ala | Val | Leu | Leu | Pro | Val | Leu | Phe | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Leu | Tyr | Arg | His | Arg | Asn | Ser | Met | Lys | Val | Phe | Leu | Lys | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Gly | Glu | Cys | Ala | Ser | Val | His | Pro | Lys | Thr | Cys | Pro | Val | Val | Leu | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Pro | Pro | Glu | Thr | Arg | Pro | Leu | Asn | Gly | Leu | Gly | Pro | Pro | Ser | Thr | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Pro | Leu | Asp | His | Arg | Gly | Tyr | Gln | Ser | Leu | Ser | Asp | Ser | Pro | Pro | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Gly | Ala | Arg | Val | Phe | Thr | Glu | Ser | Glu | Lys | Arg | Pro | Leu | Ser | Ile | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Gln | Asp | Ser | Phe | Val | Glu | Val | Ser | Pro | Val | Cys | Pro | Arg | Pro | Arg | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Val | Arg | Leu | Gly | Ser | Glu | Ile | Arg | Asp | Ser | Val | Val | | | | |
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<223> Synthetic oligonucleotide probe

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<223> Synthetic oligonucleotide probe

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<211> 4563

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 3635

<223> unknown base

<400> 259

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| Glu | Gly | Cys | Arg | Ser | Gly | Gln | Ala | Ala | Ala | Ser | Gln | Ala | Gly | Gly | |
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| Tyr | Arg | Thr | Trp | Ser | Lys | Thr | Ile | Pro | Gly | Lys | Val | Gln | Phe | Phe | |
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| Ser | Ser | Glu | Gly | Ser | Asp | Thr | Ser | Val | Pro | Ile | Pro | Val | Val | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Arg | Gly | Val | Asp | Asp | Ser | Tyr | Pro | Pro | Gln | Lys | Lys | Ser | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Met | Met | Leu | Lys | Tyr | Met | His | Asp | His | Tyr | Leu | Asp | Lys | Tyr | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Phe | Met | Arg | Ala | Asp | Asp | Asp | Val | Tyr | Ile | Lys | Gly | Asp | Arg | |
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| Leu | Gly | Gln | Thr | Gly | Leu | Gly | Thr | Thr | Glu | Glu | Met | Gly | Lys | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
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| Lys | Cys | Leu | Arg | Glu | Met | Tyr | Thr | Thr | His | Glu | Asp | Val | Glu | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
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| His | Ser | Tyr | Met | Leu | Ser | Arg | Lys | Ile | Ser | Glu | Leu | Arg | His | Arg | | | | | |
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| Thr | Ile | Gln | Leu | His | Arg | Glu | Ile | Val | Leu | Met | Ser | Lys | Tyr | Ser | | | | | |
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| Asn | Thr | Glu | Ile | His | Lys | Glu | Asp | Leu | Gln | Leu | Gly | Ile | Pro | Pro | | | | | |
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| Ser | Phe | Met | Arg | Phe | Gln | Pro | Arg | Gln | Arg | Glu | Glu | Ile | Leu | Glu | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Trp | Glu | Phe | Leu | Thr | Gly | Lys | Tyr | Leu | Tyr | Ser | Ala | Val | Asp | Gly | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Gln | Pro | Pro | Arg | Arg | Gly | Met | Asp | Ser | Ala | Gln | Arg | Glu | Ala | Leu | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Asp | Asp | Ile | Val | Met | Gln | Val | Met | Glu | Met | Ile | Asn | Ala | Asn | Ala | | | | | |
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| Tyr | Arg | Arg | Val | Asn | Pro | Met | Tyr | Gly | Ala | Glu | Tyr | Ile | Leu | Asp | | | | | |
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| Leu | Leu | Leu | Leu | Tyr | Lys | Lys | His | Lys | Gly | Lys | Lys | Met | Thr | Val | | | | | |
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| Pro | Val | Arg | Arg | His | Ala | Tyr | Leu | Gln | Gln | Thr | Phe | Ser | Lys | Ile | | | | | |
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| Gln | Phe | Val | Glu | His | Glu | Glu | Leu | Asp | Ala | Gln | Glu | Leu | Ala | Lys | | | | | |
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| Leu | Lys | Lys | Leu | Val | Pro | Phe | Gln | Leu | Pro | Gly | Ser | Lys | Ser | Glu | | | | | |
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| His | Lys | Glu | Pro | Lys | Asp | Lys | Lys | Ile | Asn | Ile | Leu | Ile | Pro | Leu | | | | | |
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| Lys | Thr | Cys | Leu | Ile | Pro | Asn | Gln | Asn | Val | Lys | Leu | Val | Val | Leu | | | | | |

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| Val | Gly | Ser | Ser | Gln | Phe | Asn | Asn | Glu | Ser | Leu | Leu | Phe | Phe | Cys |
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| Asp | Val | Asp | Leu | Val | Phe | Thr | Thr | Glu | Phe | Leu | Gln | Arg | Cys | Arg |
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| Ala | Asn | Thr | Val | Leu | Gly | Gln | Gln | Ile | Tyr | Phe | Pro | Ile | Ile | Phe |
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| Ser | Gln | Tyr | Asp | Pro | Lys | Ile | Val | Tyr | Ser | Gly | Lys | Val | Pro | Ser |
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| Asp | Asn | His | Phe | Ala | Phe | Thr | Gln | Lys | Thr | Gly | Phe | Trp | Arg | Asn |
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| Tyr | Gly | Phe | Gly | Ile | Thr | Cys | Ile | Tyr | Lys | Gly | Asp | Leu | Val | Arg |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Val | Gly | Gly | Phe | Asp | Val | Ser | Ile | Gln | Gly | Trp | Gly | Leu | Glu | Asp |
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| Val | Asp | Leu | Phe | Asn | Lys | Val | Val | Gln | Ala | Gly | Leu | Lys | Thr | Phe |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Arg | Ser | Gln | Glu | Val | Gly | Val | Val | His | Val | His | His | Pro | Val | Phe |
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| Ser | Lys | Ala | Ser | Thr | Tyr | Gly | Ser | Thr | Gln | Gln | Leu | Ala | Glu | Met |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Trp | Leu | Glu | Lys | Asn | Asp | Pro | Ser | Tyr | Ser | Lys | Ser | Ser | Asn | Asn |
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 50 55 60
 Pro Lys His Val Tyr Ser Ile Ala Ser Lys Gly Ser Lys Phe Lys
 65 70 75
 Glu Leu Val Thr His Gly Asp Ala Ser Thr Glu Asn Asp Val Leu
 80 85 90

| | | | | | | | | | | | | | | | | | |
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| Thr | Asn | Pro | Ile | Ser | Glu | Glu | Thr | Thr | Thr | Phe | Pro | Thr | Gly | Gly | 95 | 100 | 105 |
| Phe | Thr | Pro | Glu | Ile | Gly | Lys | Lys | Lys | His | Thr | Glu | Ser | Thr | Pro | 110 | 115 | 120 |
| Phe | Trp | Ser | Ile | Lys | Pro | Asn | Asn | Val | Ser | Ile | Val | Leu | His | Ala | 125 | 130 | 135 |
| Glu | Glu | Pro | Tyr | Ile | Glu | Asn | Glu | Glu | Pro | Glu | Pro | Glu | Pro | Glu | 140 | 145 | 150 |
| Pro | Ala | Ala | Lys | Gln | Thr | Glu | Ala | Pro | Arg | Met | Leu | Pro | Val | Val | 155 | 160 | 165 |
| Thr | Glu | Ser | Ser | Thr | Ser | Pro | Tyr | Val | Thr | Ser | Tyr | Lys | Ser | Pro | 170 | 175 | 180 |
| Val | Thr | Thr | Leu | Asp | Lys | Ser | Thr | Gly | Ile | Glu | Ile | Ser | Thr | Glu | 185 | 190 | 195 |
| Ser | Glu | Asp | Val | Pro | Gln | Leu | Ser | Gly | Glu | Thr | Ala | Ile | Glu | Lys | 200 | 205 | 210 |
| Pro | Glu | Glu | Phe | Gly | Lys | His | Pro | Glu | Ser | Trp | Asn | Asn | Asp | Asp | 215 | 220 | 225 |
| Ile | Leu | Lys | Lys | Ile | Leu | Asp | Ile | Asn | Ser | Gln | Val | Gln | Gln | Ala | 230 | 235 | 240 |
| Leu | Leu | Ser | Asp | Thr | Ser | Asn | Pro | Ala | Tyr | Arg | Glu | Asp | Ile | Glu | 245 | 250 | 255 |
| Ala | Ser | Lys | Asp | His | Leu | Lys | Arg | Ser | Leu | Ala | Leu | Ala | Ala | Ala | 260 | 265 | 270 |
| Ala | Glu | His | Lys | Leu | Lys | Thr | Met | Tyr | Lys | Ser | Gln | Leu | Leu | Pro | 275 | 280 | 285 |
| Val | Gly | Arg | Thr | Ser | Asn | Lys | Ile | Asp | Asp | Ile | Glu | Thr | Val | Ile | 290 | 295 | 300 |
| Asn | Met | Leu | Cys | Asn | Ser | Arg | Ser | Lys | Leu | Tyr | Glu | Tyr | Leu | Asp | 305 | 310 | 315 |
| Ile | Lys | Cys | Val | Pro | Pro | Glu | Met | Arg | Glu | Lys | Ala | Ala | Thr | Val | 320 | 325 | 330 |
| Phe | Asn | Thr | Leu | Lys | Asn | Met | Cys | Arg | Ser | Arg | Arg | Val | Thr | Ala | 335 | 340 | 345 |
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<212> PRT

<213> Homo sapiens

<400> 267

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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Gln | Trp | Gln | Val | Thr | Gly | Pro | Gly | Lys | Phe | Val | Gln | Ala |
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Leu Val Gly Glu Asp Ala Val Phe Ser Cys Ser Leu Phe Pro Glu

| | 35 | 40 | 45 |
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| | 50 | 55 | 60 |
| His Ala Val Val | His Leu Tyr Arg Asp | Gly Glu Asp Trp Glu | Ser |
| | 65 | 70 | 75 |
| Lys Gln Met Pro | Gln Tyr Arg Gly Arg | Thr Glu Phe Val Lys | Asp |
| | 80 | 85 | 90 |
| Ser Ile Ala Gly | Gly Arg Val Ser Leu | Arg Leu Lys Asn Ile | Thr |
| | 95 | 100 | 105 |
| Pro Ser Asp Ile | Gly Leu Tyr Gly Cys | Trp Phe Ser Ser Gln | Ile |
| | 110 | 115 | 120 |
| Tyr Asp Glu Glu | Ala Thr Trp Glu Leu | Arg Val Ala Ala Leu | Gly |
| | 125 | 130 | 135 |
| Ser Leu Pro Leu | Ile Ser Ile Val Gly | Tyr Val Asp Gly Gly | Ile |
| | 140 | 145 | 150 |
| Gln Leu Leu Cys | Leu Ser Ser Gly Trp | Phe Pro Gln Pro Thr | Ala |
| | 155 | 160 | 165 |
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| | 170 | 175 | 180 |
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| | 185 | 190 | 195 |
| Ile Val Gln Glu | Asn Ala Gly Ser Ile | Leu Cys Ser Ile His | Leu |
| | 200 | 205 | 210 |
| Ala Glu Gln Ser | His Glu Val Glu Ser | Lys Val Leu Ile Gly | Glu |
| | 215 | 220 | 225 |
| Thr Phe Phe Gln | Pro Ser Pro Trp Arg | Leu Ala Ser Ile Leu | Leu |
| | 230 | 235 | 240 |
| Gly Leu Leu Cys | Gly Ala Leu Cys Gly | Val Val Met Gly Met | Ile |
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| Ile Val Phe Phe | Lys Ser Lys Gly Lys | Ile Gln Ala Glu Leu | Asp |
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| Trp Arg Arg Lys | His Gly Gln Ala Glu | Leu Arg Asp Ala Arg | Lys |
| | 275 | 280 | 285 |
| His Ala Val Glu | Val Thr Leu Asp Pro | Glu Thr Ala His Pro | Lys |
| | 290 | 295 | 300 |
| Leu Cys Val Ser | Asp Leu Lys Thr Val | Thr His Arg Lys Ala | Pro |
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| Gln Glu Val Pro | His Ser Glu Lys Arg | Phe Thr Arg Lys Ser | Val |

| | | |
|---|-----|-----|
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| 335 | 340 | 345 |
| Asp Val Gly Gln Asn Val Gly Trp Tyr Val Gly Val Cys Arg Asp | | |
| 350 | 355 | 360 |
| Asp Val Asp Arg Gly Lys Asn Asn Val Thr Leu Ser Pro Asn Asn | | |
| 365 | 370 | 375 |
| Gly Tyr Trp Val Leu Arg Leu Thr Thr Glu His Leu Tyr Phe Thr | | |
| 380 | 385 | 390 |
| Phe Asn Pro His Phe Ile Ser Leu Pro Pro Ser Thr Pro Pro Thr | | |
| 395 | 400 | 405 |
| Arg Val Gly Val Phe Leu Asp Tyr Glu Gly Gly Thr Ile Ser Phe | | |
| 410 | 415 | 420 |
| Phe Asn Thr Asn Asp Gln Ser Leu Ile Tyr Thr Leu Leu Thr Cys | | |
| 425 | 430 | 435 |
| Gln Phe Glu Gly Leu Leu Arg Pro Tyr Ile Gln His Ala Met Tyr | | |
| 440 | 445 | 450 |
| Asp Glu Glu Lys Gly Thr Pro Ile Phe Ile Cys Pro Val Ser Trp | | |
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<210> 268

<211> 2103

<212> DNA

<213> Homo sapiens

<400> 268

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Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
50 55 60
Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
65 70 75
Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
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Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
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Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
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Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
125 130 135
Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
140 145 150
Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
155 160 165
Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
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185 190 195
Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Asp | Gly | Ser | His | Arg | Cys | Gly | Ala | Thr | Leu | Ile | Asn | Ala | Thr | 215 | 220 | 225 |
| Trp | Leu | Val | Ser | Ala | Ala | His | Cys | Phe | Thr | Thr | Tyr | Lys | Asn | Pro | 230 | 235 | 240 |
| Ala | Arg | Trp | Thr | Ala | Ser | Phe | Gly | Val | Thr | Ile | Lys | Pro | Ser | Lys | 245 | 250 | 255 |
| Met | Lys | Arg | Gly | Leu | Arg | Arg | Ile | Ile | Val | His | Glu | Lys | Tyr | Lys | 260 | 265 | 270 |
| His | Pro | Ser | His | Asp | Tyr | Asp | Ile | Ser | Leu | Ala | Glu | Leu | Ser | Ser | 275 | 280 | 285 |
| Pro | Val | Pro | Tyr | Thr | Asn | Ala | Val | His | Arg | Val | Cys | Leu | Pro | Asp | 290 | 295 | 300 |
| Ala | Ser | Tyr | Glu | Phe | Gln | Pro | Gly | Asp | Val | Met | Phe | Val | Thr | Gly | 305 | 310 | 315 |
| Phe | Gly | Ala | Leu | Lys | Asn | Asp | Gly | Tyr | Ser | Gln | Asn | His | Leu | Arg | 320 | 325 | 330 |
| Gln | Ala | Gln | Val | Thr | Leu | Ile | Asp | Ala | Thr | Thr | Cys | Asn | Glu | Pro | 335 | 340 | 345 |
| Gln | Ala | Tyr | Asn | Asp | Ala | Ile | Thr | Pro | Arg | Met | Leu | Cys | Ala | Gly | 350 | 355 | 360 |
| Ser | Leu | Glu | Gly | Lys | Thr | Asp | Ala | Cys | Gln | Gly | Asp | Ser | Gly | Gly | 365 | 370 | 375 |
| Pro | Leu | Val | Ser | Ser | Asp | Ala | Arg | Asp | Ile | Trp | Tyr | Leu | Ala | Gly | 380 | 385 | 390 |
| Ile | Val | Ser | Trp | Gly | Asp | Glu | Cys | Ala | Lys | Pro | Asn | Lys | Pro | Gly | 395 | 400 | 405 |
| Val | Tyr | Thr | Arg | Val | Thr | Ala | Leu | Arg | Asp | Trp | Ile | Thr | Ser | Lys | 410 | 415 | 420 |

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<211> 1170

<212> DNA

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<210> 271

<211> 238

<212> PRT

<213> Homo sapiens

<400> 271

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ser | Pro | Cys | Leu | Leu | Trp | Leu | Leu | Ala | Val | Thr | Phe |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Pro | Arg | Ala | Gln | Pro | Leu | Ala | Pro | Gln | Asp | Phe | Glu | Glu |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ala | Asp | Glu | Thr | Glu | Thr | Ala | Trp | Pro | Pro | Leu | Pro | Ala |
| | | | | 35 | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Pro | Cys | Asp | Tyr | Asp | His | Cys | Arg | His | Leu | Gln | Val | Pro | Cys | | 50 | 55 | 60 |
| Lys | Glu | Leu | Gln | Arg | Val | Gly | Pro | Ala | Ala | Cys | Leu | Cys | Pro | Gly | | 65 | 70 | 75 |
| Leu | Ser | Ser | Pro | Ala | Gln | Pro | Pro | Asp | Pro | Pro | Arg | Met | Gly | Glu | | 80 | 85 | 90 |
| Val | Arg | Ile | Ala | Ala | Glu | Glu | Gly | Arg | Ala | Val | Val | His | Trp | Cys | | 95 | 100 | 105 |
| Ala | Pro | Phe | Ser | Pro | Val | Leu | His | Tyr | Trp | Leu | Leu | Leu | Trp | Asp | | 110 | 115 | 120 |
| Gly | Ser | Glu | Ala | Ala | Gln | Lys | Gly | Pro | Pro | Leu | Asn | Ala | Thr | Val | | 125 | 130 | 135 |
| Arg | Arg | Ala | Glu | Leu | Lys | Gly | Leu | Lys | Pro | Gly | Gly | Ile | Tyr | Val | | 140 | 145 | 150 |
| Val | Cys | Val | Val | Ala | Ala | Asn | Glu | Ala | Gly | Ala | Ser | Arg | Val | Pro | | 155 | 160 | 165 |
| Gln | Ala | Gly | Gly | Glu | Gly | Leu | Glu | Gly | Ala | Asp | Ile | Pro | Ala | Phe | | 170 | 175 | 180 |
| Gly | Pro | Cys | Ser | Arg | Leu | Ala | Val | Pro | Pro | Asn | Pro | Arg | Thr | Leu | | 185 | 190 | 195 |
| Val | His | Ala | Ala | Val | Gly | Val | Gly | Thr | Ala | Leu | Ala | Leu | Leu | Ser | | 200 | 205 | 210 |
| Cys | Ala | Ala | Leu | Val | Trp | His | Phe | Cys | Leu | Arg | Asp | Arg | Trp | Gly | | 215 | 220 | 225 |
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<211> 2397

<212> DNA

<213> Homo sapiens

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<211> 305

<212> PRT

<213> Homo sapiens

<400> 273

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Asn | Leu | Leu | Phe | Trp | Leu | Met | Ser | Ile | Ser | Val | Leu | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Val | Ser | Ala | Trp | Met | Arg | Asp | Tyr | Leu | Asn | Asn | Val | Leu | Thr | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Thr | Ala | Glu | Thr | Arg | Val | Glu | Glu | Ala | Val | Ile | Leu | Thr | Tyr | Phe |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Pro | Val | Val | His | Pro | Val | Met | Ile | Ala | Val | Cys | Cys | Phe | Leu | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Ile | Val | Gly | Met | Leu | Gly | Tyr | Cys | Gly | Thr | Val | Lys | Arg | Asn | Leu |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Leu | Leu | Leu | Ala | Trp | Tyr | Phe | Gly | Ser | Leu | Leu | Val | Ile | Phe | Cys |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Val | Glu | Leu | Ala | Cys | Gly | Val | Trp | Thr | Tyr | Glu | Gln | Glu | Leu | Met |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Pro | Val | Gln | Trp | Ser | Asp | Met | Val | Thr | Leu | Lys | Ala | Arg | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Asn | Tyr | Gly | Leu | Pro | Arg | Tyr | Arg | Trp | Leu | Thr | His | Ala | Trp | |
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| Asn | Phe | Phe | Gln | Arg | Glu | Phe | Lys | Cys | Cys | Gly | Val | Val | Tyr | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Asp | Trp | Leu | Glu | Met | Thr | Glu | Met | Asp | Trp | Pro | Pro | Asp | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Cys | Val | Arg | Glu | Phe | Pro | Gly | Cys | Ser | Lys | Gln | Ala | His | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Asp | Leu | Ser | Asp | Leu | Tyr | Gln | Glu | Gly | Cys | Gly | Lys | Lys | Met | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | Ser | Phe | Leu | Arg | Gly | Thr | Lys | Gln | Leu | Gln | Val | Leu | Arg | Phe | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Gly | Ile | Ser | Ile | Gly | Val | Thr | Gln | Ile | Leu | Ala | Met | Ile | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Ile | Thr | Leu | Leu | Trp | Ala | Leu | Tyr | Tyr | Asp | Arg | Arg | Glu | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Thr | Asp | Gln | Met | Met | Ser | Leu | Lys | Asn | Asp | Asn | Ser | Gln | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Ser | Cys | Pro | Ser | Val | Glu | Leu | Leu | Lys | Pro | Ser | Leu | Ser | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Phe | Glu | His | Thr | Ser | Met | Ala | Asn | Ser | Phe | Asn | Thr | His | Phe | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
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<211> 2063

<212> DNA

<213> Homo sapiens

<400> 274

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<211> 432

<212> PRT

<213> Homo sapiens

<400> 275

| | | | | | | | | | | | | | | | | | | |
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| Met | Leu | Gln | Asp | Pro | Asp | Ser | Asp | Gln | Pro | Leu | Asn | Ser | Leu | Asp | 1 | 5 | 10 | 15 |
| Val | Lys | Pro | Leu | Arg | Lys | Pro | Arg | Ile | Pro | Met | Glu | Thr | Phe | Arg | 20 | 25 | 30 | |
| Lys | Val | Gly | Ile | Pro | Ile | Ile | Ile | Ala | Leu | Leu | Ser | Leu | Ala | Ser | 35 | 40 | 45 | |
| Ile | Ile | Ile | Val | Val | Val | Leu | Ile | Lys | Val | Ile | Leu | Asp | Lys | Tyr | 50 | 55 | 60 | |
| Tyr | Phe | Leu | Cys | Gly | Gln | Pro | Leu | His | Phe | Ile | Pro | Arg | Lys | Gln | 65 | 70 | 75 | |
| Leu | Cys | Asp | Gly | Glu | Leu | Asp | Cys | Pro | Leu | Gly | Glu | Asp | Glu | Glu | 80 | 85 | 90 | |
| His | Cys | Val | Lys | Ser | Phe | Pro | Glu | Gly | Pro | Ala | Val | Ala | Val | Arg | 95 | 100 | 105 | |
| Leu | Ser | Lys | Asp | Arg | Ser | Thr | Leu | Gln | Val | Leu | Asp | Ser | Ala | Thr | 110 | 115 | 120 | |
| Gly | Asn | Trp | Phe | Ser | Ala | Cys | Phe | Asp | Asn | Phe | Thr | Glu | Ala | Leu | 125 | 130 | 135 | |
| Ala | Glu | Thr | Ala | Cys | Arg | Gln | Met | Gly | Tyr | Ser | Arg | Ala | Val | Glu | 140 | 145 | 150 | |
| Ile | Gly | Pro | Asp | Gln | Asp | Leu | Asp | Val | Val | Glu | Ile | Thr | Glu | Asn | 155 | 160 | 165 | |
| Ser | Gln | Glu | Leu | Arg | Met | Arg | Asn | Ser | Ser | Gly | Pro | Cys | Leu | Ser | 170 | 175 | 180 | |

| | | | |
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| Gly Ser Leu Val | Ser Leu His Cys Leu | Ala Cys Gly Lys Ser | Leu |
| | 185 | 190 | 195 |
| Lys Thr Pro Arg | Val Val Gly Gly Glu | Glu Ala Ser Val Asp | Ser |
| | 200 | 205 | 210 |
| Trp Pro Trp Gln | Val Ser Ile Gln Tyr | Asp Lys Gln His Val | Cys |
| | 215 | 220 | 225 |
| Gly Gly Ser Ile | Leu Asp Pro His Trp | Val Leu Thr Ala Ala | His |
| | 230 | 235 | 240 |
| Cys Phe Arg Lys | His Thr Asp Val Phe | Asn Trp Lys Val Arg | Ala |
| | 245 | 250 | 255 |
| Gly Ser Asp Lys | Leu Gly Ser Phe Pro | Ser Leu Ala Val Ala | Lys |
| | 260 | 265 | 270 |
| Ile Ile Ile Ile | Glu Phe Asn Pro Met | Tyr Pro Lys Asp Asn | Asp |
| | 275 | 280 | 285 |
| Ile Ala Leu Met | Lys Leu Gln Phe Pro | Leu Thr Phe Ser Gly | Thr |
| | 290 | 295 | 300 |
| Val Arg Pro Ile | Cys Leu Pro Phe Phe | Asp Glu Glu Leu Thr | Pro |
| | 305 | 310 | 315 |
| Ala Thr Pro Leu | Trp Ile Ile Gly Trp | Gly Phe Thr Lys Gln | Asn |
| | 320 | 325 | 330 |
| Gly Gly Lys Met | Ser Asp Ile Leu Leu | Gln Ala Ser Val Gln | Val |
| | 335 | 340 | 345 |
| Ile Asp Ser Thr | Arg Cys Asn Ala Asp | Asp Ala Tyr Gln Gly | Glu |
| | 350 | 355 | 360 |
| Val Thr Glu Lys | Met Met Cys Ala Gly | Ile Pro Glu Gly Gly | Val |
| | 365 | 370 | 375 |
| Asp Thr Cys Gln | Gly Asp Ser Gly Gly | Pro Leu Met Tyr Gln | Ser |
| | 380 | 385 | 390 |
| Asp Gln Trp His | Val Val Gly Ile Val | Ser Trp Gly Tyr Gly | Cys |
| | 395 | 400 | 405 |
| Gly Gly Pro Ser | Thr Pro Gly Val Tyr | Thr Lys Val Ser Ala | Tyr |
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<212> DNA

<213> Homo sapiens

<400> 276

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<211> 761

<212> PRT

<213> Homo sapiens

<400> 277

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| Met | Ala | Leu | Pro | Ala | Leu | Gly | Leu | Asp | Pro | Trp | Ser | Leu | Leu | Gly | 1 | 5 | 10 | 15 |
| Leu | Phe | Leu | Phe | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Pro | Thr | Thr | Thr | 20 | 25 | 30 | |
| Ala | Gly | Gly | Gly | Gly | Gln | Gly | Pro | Met | Pro | Arg | Val | Arg | Tyr | Tyr | 35 | 40 | 45 | |
| Ala | Gly | Asp | Glu | Arg | Arg | Ala | Leu | Ser | Phe | Phe | His | Gln | Lys | Gly | 50 | 55 | 60 | |
| Leu | Gln | Asp | Phe | Asp | Thr | Leu | Leu | Leu | Ser | Gly | Asp | Gly | Asn | Thr | 65 | 70 | 75 | |
| Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Ile | Leu | Ala | Leu | Asp | Ile | Gln | 80 | 85 | 90 | |
| Asp | Pro | Gly | Val | Pro | Arg | Leu | Lys | Asn | Met | Ile | Pro | Trp | Pro | Ala | 95 | 100 | 105 | |
| Ser | Asp | Arg | Lys | Lys | Ser | Glu | Cys | Ala | Phe | Lys | Lys | Lys | Ser | Asn | 110 | 115 | 120 | |
| Glu | Thr | Gln | Cys | Phe | Asn | Phe | Ile | Arg | Val | Leu | Val | Ser | Tyr | Asn | 125 | 130 | 135 | |
| Val | Thr | His | Leu | Tyr | Thr | Cys | Gly | Thr | Phe | Ala | Phe | Ser | Pro | Ala | 140 | 145 | 150 | |
| Cys | Thr | Phe | Ile | Glu | Leu | Gln | Asp | Ser | Tyr | Leu | Leu | Pro | Ile | Ser | 155 | 160 | 165 | |
| Glu | Asp | Lys | Val | Met | Glu | Gly | Lys | Gly | Gln | Ser | Pro | Phe | Asp | Pro | 170 | 175 | 180 | |
| Ala | His | Lys | His | Thr | Ala | Val | Leu | Val | Asp | Gly | Met | Leu | Tyr | Ser | 185 | 190 | 195 | |

| | | |
|-----------------|---------------------|-------------------------|
| Gly Thr Met Asn | Asn Phe Leu Gly Ser | Glu Pro Ile Leu Met Arg |
| 200 | | 205 210 |
| Thr Leu Gly Ser | Gln Pro Val Leu Lys | Thr Asp Asn Phe Leu Arg |
| 215 | | 220 225 |
| Trp Leu His His | Asp Ala Ser Phe Val | Ala Ala Ile Pro Ser Thr |
| 230 | | 235 240 |
| Gln Val Val Tyr | Phe Phe Phe Glu Glu | Thr Ala Ser Glu Phe Asp |
| 245 | | 250 255 |
| Phe Phe Glu Arg | Leu His Thr Ser Arg | Val Ala Arg Val Cys Lys |
| 260 | | 265 270 |
| Asn Asp Val Gly | Gly Glu Lys Leu Leu | Gln Lys Lys Trp Thr Thr |
| 275 | | 280 285 |
| Phe Leu Lys Ala | Gln Leu Leu Cys Thr | Gln Pro Gly Gln Leu Pro |
| 290 | | 295 300 |
| Phe Asn Val Ile | Arg His Ala Val Leu | Leu Pro Ala Asp Ser Pro |
| 305 | | 310 315 |
| Thr Ala Pro His | Ile Tyr Ala Val Phe | Thr Ser Gln Trp Gln Val |
| 320 | | 325 330 |
| Gly Gly Thr Arg | Ser Ser Ala Val Cys | Ala Phe Ser Leu Leu Asp |
| 335 | | 340 345 |
| Ile Glu Arg Val | Phe Lys Gly Lys Tyr | Lys Glu Leu Asn Lys Glu |
| 350 | | 355 360 |
| Thr Ser Arg Trp | Thr Thr Tyr Arg Gly | Pro Glu Thr Asn Pro Arg |
| 365 | | 370 375 |
| Pro Gly Ser Cys | Ser Val Gly Pro Ser | Ser Asp Lys Ala Leu Thr |
| 380 | | 385 390 |
| Phe Met Lys Asp | His Phe Leu Met Asp | Glu Gln Val Val Gly Thr |
| 395 | | 400 405 |
| Pro Leu Leu Val | Lys Ser Gly Val Glu | Tyr Thr Arg Leu Ala Val |
| 410 | | 415 420 |
| Glu Thr Ala Gln | Gly Leu Asp Gly His | Ser His Leu Val Met Tyr |
| 425 | | 430 435 |
| Leu Gly Thr Thr | Thr Gly Ser Leu His | Lys Ala Val Val Ser Gly |
| 440 | | 445 450 |
| Asp Ser Ser Ala | His Leu Val Glu Glu | Ile Gln Leu Phe Pro Asp |
| 455 | | 460 465 |
| Pro Glu Pro Val | Arg Asn Leu Gln Leu | Ala Pro Thr Gln Gly Ala |
| 470 | | 475 480 |

| | | | |
|---|-----|-----|-----|
| Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala | 485 | 490 | 495 |
| Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg | 500 | 505 | 510 |
| Asp Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu | 515 | 520 | 525 |
| Leu Ser Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg | 530 | 535 | 540 |
| Gly Asn Pro Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser | 545 | 550 | 555 |
| Leu Arg Pro Gln Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala | 560 | 565 | 570 |
| Val Pro Asn Ser Ile Leu Glu Leu Pro Cys Pro His Leu Ser Ala | 575 | 580 | 585 |
| Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro Ala Ala Val Pro Glu | 590 | 595 | 600 |
| Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu Leu Ile Val Gln | 605 | 610 | 615 |
| Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr Glu Asn Gly | 620 | 625 | 630 |
| Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln Asp Gln | 635 | 640 | 645 |
| Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu His | 650 | 655 | 660 |
| Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala | 665 | 670 | 675 |
| Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu | 680 | 685 | 690 |
| Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser | 695 | 700 | 705 |
| Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu | 710 | 715 | 720 |
| Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His | 725 | 730 | 735 |
| Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp | 740 | 745 | 750 |
| Ala Asp Asn Asn Cys Leu Gly Thr Glu Val Ala | 755 | 760 | |

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<210> 282

<211> 523

<212> PRT

<213> Homo sapiens

<400> 282

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Gln | Arg | Val | Leu | Leu | Leu | Val | Gly | Phe | Leu | Leu | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Val | Leu | Leu | Ser | Glu | Ala | Ala | Lys | Ile | Leu | Thr | Ile | Ser | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Gly | Gly | Ser | His | Tyr | Leu | Leu | Met | Asp | Arg | Val | Ser | Gln | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Gln | Asp | His | Gly | His | Asn | Val | Thr | Met | Leu | Asn | His | Lys | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Pro | Phe | Met | Pro | Asp | Phe | Lys | Lys | Glu | Glu | Lys | Ser | Tyr | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Ile | Ser | Trp | Leu | Ala | Pro | Glu | Asp | His | Gln | Arg | Glu | Phe | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Ser | Phe | Asp | Phe | Phe | Leu | Glu | Glu | Thr | Leu | Gly | Gly | Arg | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Lys | Phe | Glu | Asn | Leu | Leu | Asn | Val | Leu | Glu | Tyr | Leu | Ala | Leu | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Ser | His | Phe | Leu | Asn | Arg | Lys | Asp | Ile | Met | Asp | Ser | Leu | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Glu | Asn | Phe | Asp | Met | Val | Ile | Val | Glu | Thr | Phe | Asp | Tyr | Cys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Phe | Leu | Ile | Ala | Glu | Lys | Leu | Gly | Lys | Pro | Phe | Val | Ala | Ile |

| | | |
|-------------------------------------|-------------------------|-----|
| 155 | 160 | 165 |
| Leu Ser Thr Ser Phe Gly Ser Leu Glu | Phe Gly Leu Pro Ile Pro | |
| 170 | 175 | 180 |
| Leu Ser Tyr Val Pro Val Phe Arg Ser | Leu Leu Thr Asp His Met | |
| 185 | 190 | 195 |
| Asp Phe Trp Gly Arg Val Lys Asn Phe | Leu Met Phe Phe Ser Phe | |
| 200 | 205 | 210 |
| Cys Arg Arg Gln Gln His Met Gln Ser | Thr Phe Asp Asn Thr Ile | |
| 215 | 220 | 225 |
| Lys Glu His Phe Thr Glu Gly Ser Arg | Pro Val Leu Ser His Leu | |
| 230 | 235 | 240 |
| Leu Leu Lys Ala Glu Leu Trp Phe Ile | Asn Ser Asp Phe Ala Phe | |
| 245 | 250 | 255 |
| Asp Phe Ala Arg Pro Leu Leu Pro Asn | Thr Val Tyr Val Gly Gly | |
| 260 | 265 | 270 |
| Leu Met Glu Lys Pro Ile Lys Pro Val | Pro Gln Asp Leu Glu Asn | |
| 275 | 280 | 285 |
| Phe Ile Ala Lys Phe Gly Asp Ser Gly | Phe Val Leu Val Thr Leu | |
| 290 | 295 | 300 |
| Gly Ser Met Val Asn Thr Cys Gln Asn | Pro Glu Ile Phe Lys Glu | |
| 305 | 310 | 315 |
| Met Asn Asn Ala Phe Ala His Leu Pro | Gln Gly Val Ile Trp Lys | |
| 320 | 325 | 330 |
| Cys Gln Cys Ser His Trp Pro Lys Asp | Val His Leu Ala Ala Asn | |
| 335 | 340 | 345 |
| Val Lys Ile Val Asp Trp Leu Pro Gln | Ser Asp Leu Leu Ala His | |
| 350 | 355 | 360 |
| Pro Ser Ile Arg Leu Phe Val Thr His | Gly Gly Gln Asn Ser Ile | |
| 365 | 370 | 375 |
| Met Glu Ala Ile Gln His Gly Val Pro | Met Val Gly Ile Pro Leu | |
| 380 | 385 | 390 |
| Phe Gly Asp Gln Pro Glu Asn Met Val | Arg Val Glu Ala Lys Lys | |
| 395 | 400 | 405 |
| Phe Gly Val Ser Ile Gln Leu Lys Lys | Leu Lys Ala Glu Thr Leu | |
| 410 | 415 | 420 |
| Ala Leu Lys Met Lys Gln Ile Met Glu | Asp Lys Arg Tyr Lys Ser | |
| 425 | 430 | 435 |
| Ala Ala Val Ala Ala Ser Val Ile Leu | Arg Ser His Pro Leu Ser | |

| | | | | | |
|-----------------|---|--|-----|--|-----|
| | 440 | | 445 | | 450 |
| Pro Thr Gln Arg | Leu Val Gly Trp Ile Asp His Val Leu Gln Thr | | | | |
| | 455 | | 460 | | 465 |
| Gly Gly Ala Thr | His Leu Lys Pro Tyr Val Phe Gln Gln Pro Trp | | | | |
| | 470 | | 475 | | 480 |
| His Glu Gln Tyr | Leu Phe Asp Val Phe Val Phe Leu Leu Gly Leu | | | | |
| | 485 | | 490 | | 495 |
| Thr Leu Gly Thr | Leu Trp Leu Cys Gly Lys Leu Leu Gly Met Ala | | | | |
| | 500 | | 505 | | 510 |
| Val Trp Trp Leu | Arg Gly Ala Arg Lys Val Lys Glu Thr | | | | |
| | 515 | | 520 | | |

<210> 283

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 283

 tgcctttgct cacctacccc aagg 24

<210> 284

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 284

 tcaggctggt ctccaaagag aggg 24

<210> 285

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 285

 cccaaagatg tccacctggc tgcaaattgtg aaaattgtgg actgg 45

<210> 286

<211> 2340

<212> DNA

<213> Homo sapiens

<400> 286

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gtgctgtccc atccagcagg gctaccctga agctctggct gcagccctcc 200
cgtccagtgg gcaggcggct tcatccctcc tttctctccc aaagcccaac 250
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gagtaagagt gggaggcagg acagagctgg gacacaggta tggagagggg 350
gttcagcgag cctagagagg gcagactatc aggggtgccgg cggtgagaat 400
ccaggggagag gagcggaaac agaagagggg cagaagaccg gggcacttgt 450
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 tcttatcccg ctgtccatt ggcccagcct ggatgaatct atcaataaaa 2200
 caactagaga atggtggta gtgagacact atagaattac taaggagaag 2250
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<210> 287

<211> 205

<212> PRT

<213> Homo sapiens

<400> 287

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ala | Lys | Pro | His | Trp | Leu | Pro | Gly | Pro | Leu | His | Ser |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Pro | Gly | Leu | Pro | Leu | Val | Leu | Val | Leu | Leu | Ala | Leu | Gly | Ala | Gly |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Trp | Ala | Gln | Glu | Gly | Ser | Glu | Pro | Val | Leu | Leu | Glu | Gly | Glu | Cys |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Leu | Val | Val | Cys | Glu | Pro | Gly | Arg | Ala | Ala | Ala | Gly | Gly | Pro | Gly |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Gly | Ala | Ala | Leu | Gly | Glu | Ala | Pro | Pro | Gly | Arg | Val | Ala | Phe | Ala |
| | | | | 65 | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Val | Arg | Ser | His | His | His | Glu | Pro | Ala | Gly | Glu | Thr | Gly | Asn | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Thr | Ser | Gly | Ala | Ile | Tyr | Phe | Asp | Gln | Val | Leu | Val | Asn | Glu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Gly | Gly | Phe | Asp | Arg | Ala | Ser | Gly | Ser | Phe | Val | Ala | Pro | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Arg | Gly | Val | Tyr | Ser | Phe | Arg | Phe | His | Val | Val | Lys | Val | Tyr | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Gln | Thr | Val | Gln | Val | Ser | Leu | Met | Leu | Asn | Thr | Trp | Pro | Val | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ile | Ser | Ala | Phe | Ala | Asn | Asp | Pro | Asp | Val | Thr | Arg | Glu | Ala | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Ser | Ser | Val | Leu | Leu | Pro | Leu | Asp | Pro | Gly | Asp | Arg | Val | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Arg | Leu | Arg | Arg | Gly | Asn | Leu | Leu | Gly | Gly | Trp | Lys | Tyr | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Phe | Ser | Gly | Phe | Leu | Ile | Phe | Pro | Leu | | | | | | |
| | | | | 200 | | | | | 205 | | | | | | |

<210> 288

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 288

aggcagccac cagctctgtg ctac 24

<210> 289

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 289

cagagaggga agatgaggaa gccagag 27

<210> 290

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 290
ctgtgctact gcccttggac cctggggacc gagtgtctct gc 42

<210> 291
<211> 1570
<212> DNA
<213> Homo sapiens

<400> 291
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tagccgccca gcctcgacgc cgtcccggga cccctgtgct ctgcgcgaag 100
ccctggcccc gggggccggg gcatgggcca ggggcgcggg gtgaagcggc 150
ttcccgcggg gccgtgactg ggcgggcttc agccatgaag accctcatag 200
ccgcctactc cgggggtcctg cgcggcgagc gtcaggccga ggctgaccgg 250
agccagcgct ctacaggagg acctgcgctg tcgcgcgagg ggtctgggag 300
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tcacctggct caataggtcc aaggtggaaa agcagctaca ggtcatctca 400
gtgctccagt gggtcctgtc ctcccttgta ctgggagtgg cctgcagtgc 450
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acttcacttg gctgggtgtt gactggaaca cacccaagaa aggtggcagg 550
aggtcacagt ggggtccgaaa ctgggctgtg tggcgctact ttcgagacta 600
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<210> 292
 <211> 388
 <212> PRT
 <213> Homo sapiens

<400> 292
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 Ala Leu Ser Arg Glu Gly Ser Gly Arg Trp Gly Thr Gly Ser Ser
 35 40 45
 Ile Leu Ser Ala Leu Gln Asp Leu Phe Ser Val Thr Trp Leu Asn
 50 55 60
 Arg Ser Lys Val Glu Lys Gln Leu Gln Val Ile Ser Val Leu Gln
 65 70 75
 Trp Val Leu Ser Phe Leu Val Leu Gly Val Ala Cys Ser Ala Ile
 80 85 90
 Leu Met Tyr Ile Phe Cys Thr Asp Cys Trp Leu Ile Ala Val Leu
 95 100 105
 Tyr Phe Thr Trp Leu Val Phe Asp Trp Asn Thr Pro Lys Lys Gly
 110 115 120
 Gly Arg Arg Ser Gln Trp Val Arg Asn Trp Ala Val Trp Arg Tyr
 125 130 135
 Phe Arg Asp Tyr Phe Pro Ile Gln Leu Val Lys Thr His Asn Leu
 140 145 150
 Leu Thr Thr Arg Asn Tyr Ile Phe Gly Tyr His Pro His Gly Ile
 155 160 165
 Met Gly Leu Gly Ala Phe Cys Asn Phe Ser Thr Glu Ala Thr Glu
 170 175 180

| | | | |
|---|-----|-----|-----|
| Val Ser Lys Lys Phe Pro Gly Ile Arg Pro Tyr Leu Ala Thr Leu | 185 | 190 | 195 |
| Ala Gly Asn Phe Arg Met Pro Val Leu Arg Glu Tyr Leu Met Ser | 200 | 205 | 210 |
| Gly Gly Ile Cys Pro Val Ser Arg Asp Thr Ile Asp Tyr Leu Leu | 215 | 220 | 225 |
| Ser Lys Asn Gly Ser Gly Asn Ala Ile Ile Ile Val Val Gly Gly | 230 | 235 | 240 |
| Ala Ala Glu Ser Leu Ser Ser Met Pro Gly Lys Asn Ala Val Thr | 245 | 250 | 255 |
| Leu Arg Asn Arg Lys Gly Phe Val Lys Leu Ala Leu Arg His Gly | 260 | 265 | 270 |
| Ala Asp Leu Val Pro Ile Tyr Ser Phe Gly Glu Asn Glu Val Tyr | 275 | 280 | 285 |
| Lys Gln Val Ile Phe Glu Glu Gly Ser Trp Gly Arg Trp Val Gln | 290 | 295 | 300 |
| Lys Lys Phe Gln Lys Tyr Ile Gly Phe Ala Pro Cys Ile Phe His | 305 | 310 | 315 |
| Gly Arg Gly Leu Phe Ser Ser Asp Thr Trp Gly Leu Val Pro Tyr | 320 | 325 | 330 |
| Ser Lys Pro Ile Thr Thr Val Val Gly Glu Pro Ile Thr Ile Pro | 335 | 340 | 345 |
| Lys Leu Glu His Pro Thr Gln Gln Asp Ile Asp Leu Tyr His Thr | 350 | 355 | 360 |
| Met Tyr Met Glu Ala Leu Val Lys Leu Phe Asp Lys His Lys Thr | 365 | 370 | 375 |
| Lys Phe Gly Leu Pro Glu Thr Glu Val Leu Glu Val Asn | 380 | 385 | |

<210> 293

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 294

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cccacagaca cccatgacac ttcc 24

<210> 295

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 295

aagaatgaat tgtacaaagc aggtgatctt cgaggagggc tcctggggcc 50

<210> 296

<211> 3060

<212> DNA

<213> Homo sapiens

<400> 296

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ccgacgcagg gccggggccg gccaggggcc gaggagcgcg gcggccagag 100
cgggggcccg gaggcgacgc cggggacgcc cgcgcgacga gcaggtggcg 150
gcggctgcag gcttgtccag ccggaagccc tgagggcagc tgttcccact 200
ggctctgctg acctgtgcc ttggacggct gtcctcagcg aggggccgtg 250
caccgcctcc tgagcagcg catgggcctg ctggccttcc tgaagacca 300
gttcgtgctg cacctgctgg tcggctttgt cttcgtggtg agtggctctg 350
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attcactaga ggctgaacag cagatttgag caggcagaaa aaaatcagca 1550
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aggaaaatta acagcctcag agaccatggg tgcaccgtca cacaaatcaa 1650
catatgcatg atgagagtcc cagaaggaga ggagagaaaag ggtcagaaaag 1700
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cagaaatcat gggagccagg agatagtggg atgaacactg ttgaaggcaa 1950
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gcctcccaaa gtgttgtgat tgcaggcgtg agccactgcg cctggccgga 2250

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 aaaaccacct gattcaaat gggcagaggg gccgggtgtg gcccacta 2950
 ccagggagac tgaagtggga ggatcgcttg ggcatgagaa gtcgaggctg 3000
 cagtgagtcg aggttgtgcg actgcattcc agcctggaca acagagtgag 3050
 accctgtctc 3060

<210> 297

<211> 368

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Leu | Ala | Phe | Leu | Lys | Thr | Gln | Phe | Val | Leu | His | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Val | Gly | Phe | Val | Phe | Val | Val | Ser | Gly | Leu | Val | Ile | Asn | Phe |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Val | Gln | Leu | Cys | Thr | Leu | Ala | Leu | Trp | Pro | Val | Ser | Lys | Gln | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Tyr | Arg | Arg | Leu | Asn | Cys | Arg | Leu | Ala | Tyr | Ser | Leu | Trp | Ser | Gln |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Leu | Val | Met | Leu | Leu | Glu | Trp | Trp | Ser | Cys | Thr | Glu | Cys | Thr | Leu |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Phe | Thr | Asp | Gln | Ala | Thr | Val | Glu | Arg | Phe | Gly | Lys | Glu | His | Ala |

| | 80 | | 85 | | 90 |
|---|-----|--|-----|--|-----|
| Val Ile Ile Leu Asn His Asn Phe Glu Ile Asp Phe Leu Cys Gly | 95 | | 100 | | 105 |
| Trp Thr Met Cys Glu Arg Phe Gly Val Leu Gly Ser Ser Lys Val | 110 | | 115 | | 120 |
| Leu Ala Lys Lys Glu Leu Leu Tyr Val Pro Leu Ile Gly Trp Thr | 125 | | 130 | | 135 |
| Trp Tyr Phe Leu Glu Ile Val Phe Cys Lys Arg Lys Trp Glu Glu | 140 | | 145 | | 150 |
| Asp Arg Asp Thr Val Val Glu Gly Leu Arg Arg Leu Ser Asp Tyr | 155 | | 160 | | 165 |
| Pro Glu Tyr Met Trp Phe Leu Leu Tyr Cys Glu Gly Thr Arg Phe | 170 | | 175 | | 180 |
| Thr Glu Thr Lys His Arg Val Ser Met Glu Val Ala Ala Ala Lys | 185 | | 190 | | 195 |
| Gly Leu Pro Val Leu Lys Tyr His Leu Leu Pro Arg Thr Lys Gly | 200 | | 205 | | 210 |
| Phe Thr Thr Ala Val Lys Cys Leu Arg Gly Thr Val Ala Ala Val | 215 | | 220 | | 225 |
| Tyr Asp Val Thr Leu Asn Phe Arg Gly Asn Lys Asn Pro Ser Leu | 230 | | 235 | | 240 |
| Leu Gly Ile Leu Tyr Gly Lys Lys Tyr Glu Ala Asp Met Cys Val | 245 | | 250 | | 255 |
| Arg Arg Phe Pro Leu Glu Asp Ile Pro Leu Asp Glu Lys Glu Ala | 260 | | 265 | | 270 |
| Ala Gln Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Leu Gln | 275 | | 280 | | 285 |
| Glu Ile Tyr Asn Gln Lys Gly Met Phe Pro Gly Glu Gln Phe Lys | 290 | | 295 | | 300 |
| Pro Ala Arg Arg Pro Trp Thr Leu Leu Asn Phe Leu Ser Trp Ala | 305 | | 310 | | 315 |
| Thr Ile Leu Leu Ser Pro Leu Phe Ser Phe Val Leu Gly Val Phe | 320 | | 325 | | 330 |
| Ala Ser Gly Ser Pro Leu Leu Ile Leu Thr Phe Leu Gly Phe Val | 335 | | 340 | | 345 |
| Gly Ala Ala Ser Phe Gly Val Arg Arg Leu Ile Gly Glu Ser Leu | 350 | | 355 | | 360 |
| Glu Pro Gly Arg Trp Arg Leu Gln | | | | | |

<210> 298
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 298
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<210> 299
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 299
 gccacctcca tgctaacgcg g 21

<210> 300
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 300
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<210> 301
 <211> 1334
 <212> DNA
 <213> Homo sapiens

<400> 301
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 tgcttttagca ctggggcact tcttgcttat ttctttggta ggaaaggggc 150
 tcagtttgtc ttgtgggggt ggtggcaggc aggccggctt acgcctgata 200
 cggccctggg ttagaaggga agggaagata aacttttata caaatgggga 250
 tagctggggg ctgagacctg cttcctcagt aaaattcctg ggatctgcct 300
 ataccttctt ttctctaacc tggcataccc tgcttaaagc ctctcagggc 350
 ttctctctgt tcttaggatc aaagtattta gagctacaag agccctcatg 400

gtctggcccc tgccccctg gccagcttca ttgtacatgt ggtgttctct 450
 tgtcgttccct gtaatgtggt atgccatggg gtctttgcac aagcctttcc 500
 tctttggctg gacactgttc cctgcccccc ccatactctt cctacttaat 550
 atgtagtcat cctgcagatt tcaattctaa catcattttc tccagggatc 600
 ctggcctgac agaattctcat cttgtttaat gctctcataa gaccacttgt 650
 ttcccttttg cagcacttgc cactcagttg tatctttatg tgcgtttgtg 700
 gttgtatggg ttgtgtctgt tccccagaat gccagctct gagctgcgtg 750
 agggtaagg gcattgctgt gcctgccagg tatagtgcct acatgtggtg 800
 ggtgctcatg ttttagagac taaatggagg aggagatgag gaaaagattg 850
 aaatctctca gttcaccaga tgggtgtaggg ccagcattg taaattcaca 900
 cgttgactgt gcttgtgaat tatctgggga tgcaggtcct gattcagtag 950
 gccaggttg ggcattctta acaaactccc acgtgatgct gatgctggtc 1000
 ctatgaacta tactaaatag taagaatcta tggagccagg ctgggcatgg 1050
 tggctcacac ctatgatccc agcactttgg gaggctgagg caggctgac 1100
 acctggagtc aggatttcaa gactagcctg gccaacatgg tggaacccca 1150
 tctgtactaa aaatacaca attagctggg catggtggca catgcctgta 1200
 gtcccagcta cttgggaggc tgaagcaaga gaatcgcttg aacctgggag 1250
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 acagagtgag actctatgtc caaaaaaaaa aaaa 1334

<210> 302

<211> 143

<212> PRT

<213> Homo sapiens

<400> 302

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | His | Ser | Leu | Gln | Cys | Pro | Gly | Ala | Ala | Thr | Arg | His | Ile |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Cys | Val | Cys | Phe | Ser | Phe | Ala | Leu | Ala | Leu | Gly | His | Phe |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Leu | Val | Gly | Lys | Gly | Leu | Ser | Leu | Ser | Cys | Gly |
| | | | | 35 | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Gly | Arg | Gln | Ala | Gly | Leu | Arg | Leu | Ile | Arg | Pro | Trp | Val |
| | | | | 50 | | | | 55 | | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Glu | Gly | Lys | Ile | Asn | Phe | Tyr | Thr | Asn | Gly | Asp | Ser | Trp |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | |
|---|-----|--|-----|--|-----|
| | 65 | | 70 | | 75 |
| Gly Leu Arg Pro Ala Ser Ser Val Lys Phe Leu Gly Ser Ala Tyr | | | | | |
| | 80 | | 85 | | 90 |
| Thr Phe Phe Ser Leu Thr Trp His Thr Leu Leu Lys Ala Ser Gln | | | | | |
| | 95 | | 100 | | 105 |
| Gly Phe Ser Leu Phe Leu Gly Ser Lys Tyr Leu Glu Leu Gln Glu | | | | | |
| | 110 | | 115 | | 120 |
| Pro Ser Trp Ser Gly Pro Cys Pro Pro Gly Gln Leu His Cys Thr | | | | | |
| | 125 | | 130 | | 135 |
| Cys Gly Val Leu Leu Ser Phe Leu | | | | | |
| | 140 | | | | |

<210> 303
 <211> 1768
 <212> DNA
 <213> Homo sapiens

<400> 303
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 tttttcagca actaaaaaag ccacaggagt tgaactgcta ggattctgac 150
 tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt 200
 tttgttctct tgtaactagc ctttaccttc ctaacacaga ggatctgtca 250
 ctgtggctct ggcccaaacc tgaccttcac tctggaacga gaacagaggt 300
 ttctaccac accgtcccct cgaagccggg gacagcctca ccttgctggc 350
 ctctcgctgg agcagtggcc tcaccaactg tctcacgtct ggaggcactg 400
 actcgggcag tgcaggtagc tgagcctctt ggtagctgcg gctttcaagg 450
 tgggccttgc cctggccgta gaagggattg acaagcccga agatttcata 500
 ggcgatggct cccactgccc aggcacacgc cttgctgtag tcaatcactg 550
 ccctggggcc aggacgggac gtggacacct gctcagaagc agtgggtgag 600
 acatcacgct gcccgcccat ctaacctttt catgtcctgc acatcacctg 650
 atccatgggc taatctgaac tctgtcccaa ggaaccaga gcttgagtga 700
 gctgtggctc agaccagaa ggggtctgct tagaccacct ggtttatgtg 750
 acaggacttg cattctcctg gaacatgagg gaacgcgga ggaaagcaaa 800
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gttgggttat cacaaggcat cgagtctcct gcattcagtg gacatgtggg 900
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 taagaatcag ttattgccgg gtgtggtggc ctgtaatgcc aacattttgg 1500
 gaggccgagg cgggtagatc acctgaggtc aggagttcaa gaccagcctg 1550
 gccaacatgg tgaaaccctt gtctctacta aaaatacaaa aaaactagcc 1600
 aggcattggt gtgtgtgcct gtatcccagc tactcgggag gctgagacag 1650
 gagaattact tgaacctggg aggtgaagga ggctgagaca ggagaatcac 1700
 ttcagcctga gcaacacagc gagactctgt ctcagaaaaa ataaaaaaag 1750
 aattatggtt atttgtaa 1768

<210> 304

<211> 109

<212> PRT

<213> Homo sapiens

<400> 304

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Trp | Trp | Leu | Val | Leu | Leu | Leu | Leu | Pro | Thr | Leu | Lys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Cys | Ser | Leu | Val | Thr | Ser | Leu | Tyr | Leu | Pro | Asn | Thr | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Ser | Leu | Trp | Leu | Trp | Pro | Lys | Pro | Asp | Leu | His | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Thr | Glu | Val | Ser | Thr | His | Thr | Val | Pro | Ser | Lys | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Ser | Pro | Cys | Trp | Pro | Leu | Ala | Gly | Ala | Val | Pro | Ser | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| | | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Val | Ser | Arg | Leu | Glu | Ala | Leu | Thr | Arg | Ala | Val | Gln | Val | Ala | |
| | | | | 80 | | | | | | 85 | | | | 90 | |
| Glu | Pro | Leu | Gly | Ser | Cys | Gly | Phe | Gln | Gly | Gly | Pro | Cys | Pro | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Arg | Arg | Asp | | | | | | | | | | | | |

<210> 305
 <211> 989
 <212> DNA
 <213> Homo sapiens

<400> 305
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 ccggctctcc gtgcccgcgc cgctggccct gggctcagcc gcactgggcg 150
 ccgccttcgc cactggcctc ttctgggga ggcggtgccc cccatggcga 200
 ggccggcgag agcagtgcct gcttcccccc gaggacagcc gcctgtggca 250
 gtatcttctg agccgctcca tgcgggagca cccggcgctg cgaagcctga 300
 ggctgctgac cctggagcag ccgcaggggg attctatgat gacctgcgag 350
 caggcccagc tcttggccaa cctggcgcgg ctcatccagg ccaagaaggc 400
 gctggacctg ggcaccttca cgggctactc cgccctggcc ctggccctgg 450
 cgctgcccgc ggacgggggc gtggtgacct gcgaggtgga cgcgcagccc 500
 ccggagctgg gacggcccct gtggaggcag gccgaggcgg agcacaagat 550
 cgacctccgg ctgaagcccc ccttgagagc cctggacgag ctgctggcgg 600
 cgggcgaggc cggcaccttc gacgtggccg tgggtggatgc ggacaaggag 650
 aactgctccg cctactacga gcgctgcctg cagctgctgc gaccggagg 700
 catcctcgcc gtcctcagag tctgtggcg cgggaagggt ctgcaacctc 750
 cgaaagggga cgtggcggcc gagtgtgtgc gaaacctaaa cgaacgcac 800
 cggcgggacg tcagggtcta catcagcctc ctgcccctgg gcgatggact 850
 caccttgccc ttcaagatct agggctggcc cctagtgagt gggctcgagg 900
 gagggttgcc tgggaacccc aggaattgac cctgagtttt aaattcgaaa 950
 ataaagtggg gctgggacac aaaaaaaaaa aaaaaaaaaa 989

<210> 306
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 306

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Thr | Gln | Pro | Val | Pro | Arg | Leu | Ser | Val | Pro | Ala | Ala | Leu | Ala | 1 | 5 | 10 | 15 |
| Leu | Gly | Ser | Ala | Ala | Leu | Gly | Ala | Ala | Phe | Ala | Thr | Gly | Leu | Phe | 20 | 25 | 30 | |
| Leu | Gly | Arg | Arg | Cys | Pro | Pro | Trp | Arg | Gly | Arg | Arg | Glu | Gln | Cys | 35 | 40 | 45 | |
| Leu | Leu | Pro | Pro | Glu | Asp | Ser | Arg | Leu | Trp | Gln | Tyr | Leu | Leu | Ser | 50 | 55 | 60 | |
| Arg | Ser | Met | Arg | Glu | His | Pro | Ala | Leu | Arg | Ser | Leu | Arg | Leu | Leu | 65 | 70 | 75 | |
| Thr | Leu | Glu | Gln | Pro | Gln | Gly | Asp | Ser | Met | Met | Thr | Cys | Glu | Gln | 80 | 85 | 90 | |
| Ala | Gln | Leu | Leu | Ala | Asn | Leu | Ala | Arg | Leu | Ile | Gln | Ala | Lys | Lys | 95 | 100 | 105 | |
| Ala | Leu | Asp | Leu | Gly | Thr | Phe | Thr | Gly | Tyr | Ser | Ala | Leu | Ala | Leu | 110 | 115 | 120 | |
| Ala | Leu | Ala | Leu | Pro | Ala | Asp | Gly | Arg | Val | Val | Thr | Cys | Glu | Val | 125 | 130 | 135 | |
| Asp | Ala | Gln | Pro | Pro | Glu | Leu | Gly | Arg | Pro | Leu | Trp | Arg | Gln | Ala | 140 | 145 | 150 | |
| Glu | Ala | Glu | His | Lys | Ile | Asp | Leu | Arg | Leu | Lys | Pro | Ala | Leu | Glu | 155 | 160 | 165 | |
| Thr | Leu | Asp | Glu | Leu | Leu | Ala | Ala | Gly | Glu | Ala | Gly | Thr | Phe | Asp | 170 | 175 | 180 | |
| Val | Ala | Val | Val | Asp | Ala | Asp | Lys | Glu | Asn | Cys | Ser | Ala | Tyr | Tyr | 185 | 190 | 195 | |
| Glu | Arg | Cys | Leu | Gln | Leu | Leu | Arg | Pro | Gly | Gly | Ile | Leu | Ala | Val | 200 | 205 | 210 | |
| Leu | Arg | Val | Leu | Trp | Arg | Gly | Lys | Val | Leu | Gln | Pro | Pro | Lys | Gly | 215 | 220 | 225 | |
| Asp | Val | Ala | Ala | Glu | Cys | Val | Arg | Asn | Leu | Asn | Glu | Arg | Ile | Arg | 230 | 235 | 240 | |
| Arg | Asp | Val | Arg | Val | Tyr | Ile | Ser | Leu | Leu | Pro | Leu | Gly | Asp | Gly | 245 | 250 | 255 | |

Leu Thr Leu Ala Phe Lys Ile
260

<210> 307
<211> 2272
<212> DNA
<213> Homo sapiens

<400> 307
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ctctcgccgt cagcatgcc aacgccttca agcccgggga cttggtgttc 100
gctaagatga agggctaccc tcaactggcct gccaggatcg acgacatcgc 150
ggatggcgcc gtgaagcccc caccacaaca gtaccccatc tttttctttg 200
gcacacacga aacagccttc ctgggaccca aggacctgtt cccctacgac 250
aaatgtaaag acaagtacgg gaagcccaac aagaggaaag gcttcaatga 300
agggctgtgg gagatccaga acaaccccc aagcagctac agcgccctc 350
cgccagttag ctctccgac agcgaggccc ccgaggccaa ccccgccgac 400
ggcagtgacg ctgacgagga cgatgaggac cgggggggtca tggccgtcac 450
agcggtaacc gccacagctg ccagcgacag gatggagagc gactcagact 500
cagacaagag tagcgacaac agtggcctga agaggaagac gcctgcgcta 550
aagatgtcgg tctcgaaacg agcccgaag gcctccagcg acctggatca 600
ggccagcgtg tccccatccg aagaggagaa ctcggaagc tcatctgagt 650
cggagaagac cagcgaccag gacttcacac ctgagaagaa agcagcggtc 700
cgggcgccac ggagggggccc tctgggggga cggaaaaaaa agaaggcgcc 750
gtcagcctcc gactccgact ccaaggccga ttcggacggg gccaaagcctg 800
agccggtggc catggcgcg tggcgctcct cctcctcctc ttctcctcc 850
tcctccgact ccgatgtgtc tgtgaagaag cctccgaggg gcaggaagcc 900
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| Glu Lys Glu Glu | Lys 350 | Glu Arg Arg Arg | Glu Arg Ala Asp | Arg Gly | 360 |
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| Pro Glu Glu Lys | Gln 440 | Gln Ala Lys Pro | Val Lys Val Glu | Arg Thr | 450 |
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| Lys Lys Glu Pro | Ser 470 | Val Glu Glu Lys | Leu Gln Lys Leu | His Ser | 480 |
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| Phe | His | Leu | Phe | Pro | Ala | Leu | Met | Met | Leu | Ser | Met | Thr | Met | Leu |
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| Phe | Leu | Pro | Val | Thr | Gly | Thr | Leu | Lys | Gln | Asn | Ile | Pro | Arg | Leu |
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| Lys | Leu | Thr | Tyr | Lys | Asp | Leu | Leu | Leu | Ser | Asn | Ser | Cys | Ile | Pro |
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| Phe | Leu | Gly | Ser | Ser | Glu | Gly | Leu | Asp | Phe | Gln | Thr | Leu | Leu | Leu |
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| Asp | Glu | Glu | Arg | Gly | Arg | Leu | Leu | Leu | Gly | Ala | Lys | Asp | His | Ile |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Leu | Ser | Leu | Val | Asp | Leu | Asn | Lys | Asn | Phe | Lys | Lys | Ile |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Trp | Pro | Ala | Ala | Lys | Glu | Arg | Val | Glu | Leu | Cys | Lys | Leu | Ala |
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| Gly | Lys | Asp | Ala | Asn | Thr | Glu | Cys | Ala | Asn | Phe | Ile | Arg | Val | Leu |
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| Gln | Pro | Tyr | Asn | Lys | Thr | His | Ile | Tyr | Val | Cys | Gly | Thr | Gly | Ala |
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| Phe | His | Pro | Ile | Cys | Gly | Tyr | Ile | Asp | Leu | Gly | Val | Tyr | Lys | Glu |
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| Lys | Asp | Thr | Ala | Phe | Thr | Arg | Ser | Leu | Gly | Pro | Thr | His | Asp | His |
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His Tyr Ile Arg Thr Asp Ile Ser Glu His Tyr Trp Leu Asn Gly

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| Ile | Lys | Arg | His | Ser | Val | Met | Tyr | Lys | Ser | Val | Tyr | Pro | Val | Ala | | | | | |
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| Gly | Gly | Pro | Thr | Phe | Lys | Arg | Ile | Asn | Val | Asp | Tyr | Arg | Leu | Thr | | | | | |
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| Gln | Ile | Val | Val | Asp | His | Val | Ile | Ala | Glu | Asp | Gly | Gln | Tyr | Asp | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Val | Met | Phe | Leu | Gly | Thr | Asp | Ile | Gly | Thr | Val | Leu | Lys | Val | Val | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Ser | Ile | Ser | Lys | Glu | Lys | Trp | Asn | Met | Glu | Glu | Val | Val | Leu | Glu | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Glu | Leu | Gln | Ile | Phe | Lys | His | Ser | Ser | Ile | Ile | Leu | Asn | Met | Glu | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Leu | Ser | Leu | Lys | Gln | Gln | Gln | Leu | Tyr | Ile | Gly | Ser | Arg | Asp | Gly | | | | | |

| | 515 | 520 | 525 |
|---|-----|-----|-----|
| Leu Val Gln Leu Ser Leu His Arg Cys Asp Thr Tyr Gly Lys Ala | 530 | 535 | 540 |
| Cys Ala Asp Cys Cys Leu Ala Arg Asp Pro Tyr Cys Ala Trp Asp | 545 | 550 | 555 |
| Gly Asn Ala Cys Ser Arg Tyr Ala Pro Thr Ser Lys Arg Arg Ala | 560 | 565 | 570 |
| Arg Arg Gln Asp Val Lys Tyr Gly Asp Pro Ile Thr Gln Cys Trp | 575 | 580 | 585 |
| Asp Ile Glu Asp Ser Ile Ser His Glu Thr Ala Asp Glu Lys Val | 590 | 595 | 600 |
| Ile Phe Gly Ile Glu Phe Asn Ser Thr Phe Leu Glu Cys Ile Pro | 605 | 610 | 615 |
| Lys Ser Gln Gln Ala Thr Ile Lys Trp Tyr Ile Gln Arg Ser Gly | 620 | 625 | 630 |
| Asp Glu His Arg Glu Glu Leu Lys Pro Asp Glu Arg Ile Ile Lys | 635 | 640 | 645 |
| Thr Glu Tyr Gly Leu Leu Ile Arg Ser Leu Gln Lys Lys Asp Ser | 650 | 655 | 660 |
| Gly Met Tyr Tyr Cys Lys Ala Gln Glu His Thr Phe Ile His Thr | 665 | 670 | 675 |
| Ile Val Lys Leu Thr Leu Asn Val Ile Glu Asn Glu Gln Met Glu | 680 | 685 | 690 |
| Asn Thr Gln Arg Ala Glu His Glu Glu Gly Gln Val Lys Asp Leu | 695 | 700 | 705 |
| Leu Ala Glu Ser Arg Leu Arg Tyr Lys Asp Tyr Ile Gln Ile Leu | 710 | 715 | 720 |
| Ser Ser Pro Asn Phe Ser Leu Asp Gln Tyr Cys Glu Gln Met Trp | 725 | 730 | 735 |
| His Arg Glu Lys Arg Arg Gln Arg Asn Lys Gly Gly Pro Lys Trp | 740 | 745 | 750 |
| Lys His Met Gln Glu Met Lys Lys Lys Arg Asn Arg Arg His His | 755 | 760 | 765 |
| Arg Asp Leu Asp Glu Leu Pro Arg Ala Val Ala Thr | 770 | 775 | |

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 <212> PRT
 <213> Homo sapiens

<400> 315

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Phe | Pro | Pro | Thr | Pro | Val | Leu | Cys | Leu | Pro | Asn | Gln | Val | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gln | Arg | Leu | Glu | Gln | Arg | Arg | Gln | Gln | Ala | Ser | Glu | Arg | Glu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Ser | Ile | Glu | Gln | Arg | Leu | Gln | Glu | Val | Arg | Glu | Ser | Ile | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ala | Gln | Val | Ser | Gln | Val | Lys | Gly | Ala | Ala | Arg | Leu | Ala | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gln | Gly | Ala | Gly | Leu | Asp | Val | Glu | Arg | Trp | Leu | Lys | Pro | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Thr | Gln | Ala | Gln | Asp | Glu | Val | Glu | Gln | Glu | Arg | Arg | Leu | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Ala | Arg | Leu | Ser | Gln | Arg | Asp | Leu | Ser | Pro | Thr | Ala | Glu | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ala | Glu | Leu | Ser | Asp | Phe | Glu | Glu | Cys | Glu | Glu | Thr | Gly | Glu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Phe | Glu | Glu | Pro | Ala | Pro | Gln | Ala | Leu | Ala | Thr | Arg | Ala | Leu | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Pro | Ala | His | Val | Val | Phe | Arg | Tyr | Gln | Ala | Gly | Arg | Glu | Asp | 155 | 160 | 165 |
| Glu | Leu | Thr | Ile | Thr | Glu | Gly | Glu | Trp | Leu | Glu | Val | Ile | Glu | Glu | 170 | 175 | 180 |
| Gly | Asp | Ala | Asp | Glu | Trp | Val | Lys | Ala | Arg | Asn | Gln | His | Gly | Glu | 185 | 190 | 195 |
| Val | Gly | Phe | Val | Pro | Glu | Arg | Tyr | Leu | Asn | Phe | Pro | Asp | Leu | Ser | 200 | 205 | 210 |
| Leu | Pro | Glu | Ser | Ser | Gln | Asp | Ser | Asp | Asn | Pro | Cys | Gly | Ala | Glu | 215 | 220 | 225 |
| Pro | Thr | Ala | Phe | Leu | Ala | Gln | Ala | Leu | Tyr | Ser | Tyr | Thr | Gly | Gln | 230 | 235 | 240 |
| Ser | Ala | Glu | Glu | Leu | Ser | Phe | Pro | Glu | Gly | Ala | Leu | Ile | Arg | Leu | 245 | 250 | 255 |
| Leu | Pro | Arg | Ala | Gln | Asp | Gly | Val | Asp | Asp | Gly | Phe | Trp | Arg | Gly | 260 | 265 | 270 |
| Glu | Phe | Gly | Gly | Arg | Val | Gly | Val | Phe | Pro | Ser | Leu | Leu | Val | Glu | 275 | 280 | 285 |
| Glu | Leu | Leu | Gly | Pro | Pro | Gly | Pro | Pro | Glu | Leu | Ser | Asp | Pro | Glu | 290 | 295 | 300 |
| Gln | Met | Leu | Pro | Ser | Pro | Ser | Pro | Pro | Ser | Phe | Ser | Pro | Pro | Ala | 305 | 310 | 315 |
| Pro | Thr | Ser | Val | Leu | Asp | Gly | Pro | Pro | Ala | Pro | Val | Leu | Pro | Gly | 320 | 325 | 330 |
| Asp | Lys | Ala | Leu | Asp | Phe | Pro | Gly | Phe | Leu | Asp | Met | Met | Ala | Pro | 335 | 340 | 345 |
| Arg | Leu | Arg | Pro | Met | Arg | Pro | Pro | Pro | Pro | Pro | Pro | Ala | Lys | Ala | 350 | 355 | 360 |
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<211> 4407

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<213> Homo sapiens

<400> 316

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<211> 837

<212> PRT

<213> Homo sapiens

<400> 317

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Trp | Leu | Trp | Gly | Ala | Gln | Pro | Cys | Leu | Leu | Leu | Pro | Ile | Val | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Leu | Ser | Trp | Leu | Val | Trp | Leu | Leu | Leu | Leu | Leu | Leu | Ala | Ser | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Leu | Pro | Ser | Ala | Arg | Leu | Ala | Ser | Pro | Leu | Pro | Arg | Glu | Glu | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ile | Val | Phe | Pro | Glu | Lys | Leu | Asn | Gly | Ser | Val | Leu | Pro | Gly | Ser | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Gly | Ala | Pro | Ala | Arg | Leu | Leu | Cys | Arg | Leu | Gln | Ala | Phe | Gly | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Thr | Leu | Leu | Leu | Glu | Leu | Glu | Gln | Asp | Ser | Gly | Val | Gln | Val | Glu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Leu | Thr | Val | Gln | Tyr | Leu | Gly | Gln | Ala | Pro | Glu | Leu | Leu | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Ala | Glu | Pro | Gly | Thr | Tyr | Leu | Thr | Gly | Thr | Ile | Asn | Gly | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Glu | Ser | Val | Ala | Ser | Leu | His | Trp | Asp | Gly | Gly | Ala | Leu | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Val | Leu | Gln | Tyr | Arg | Gly | Ala | Glu | Leu | His | Leu | Gln | Pro | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Gly | Gly | Thr | Pro | Asn | Ser | Ala | Gly | Gly | Pro | Gly | Ala | His | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Arg | Arg | Lys | Ser | Pro | Ala | Ser | Gly | Gln | Gly | Pro | Met | Cys | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | Lys | Ala | Pro | Leu | Gly | Ser | Pro | Ser | Pro | Arg | Pro | Arg | Arg | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Arg | Phe | Ala | Ser | Leu | Ser | Arg | Phe | Val | Glu | Thr | Leu | Val | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Asp | Asp | Lys | Met | Ala | Ala | Phe | His | Gly | Ala | Gly | Leu | Lys | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Tyr | Leu | Leu | Thr | Val | Met | Ala | Ala | Ala | Ala | Lys | Ala | Phe | Lys | His | |

| 245 | | | | | 250 | | | | | 255 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Ile | Arg | Asn | Pro | Val | Ser | Leu | Val | Val | Thr | Arg | Leu | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ile | Leu | Gly | Ser | Gly | Glu | Glu | Gly | Pro | Gln | Val | Gly | Pro | Ser | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ala | Gln | Thr | Leu | Arg | Ser | Phe | Cys | Ala | Trp | Gln | Arg | Gly | Leu | Asn |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Thr | Pro | Glu | Asp | Ser | Gly | Pro | Asp | His | Phe | Asp | Thr | Ala | Ile | Leu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Phe | Thr | Arg | Gln | Asp | Leu | Cys | Gly | Val | Ser | Thr | Cys | Asp | Thr | Leu |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gly | Met | Ala | Asp | Val | Gly | Thr | Val | Cys | Asp | Pro | Ala | Arg | Ser | Cys |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ala | Ile | Val | Glu | Asp | Asp | Gly | Leu | Gln | Ser | Ala | Phe | Thr | Ala | Ala |
| | | | | 350 | | | | | 355 | | | | | 360 |
| His | Glu | Leu | Gly | His | Val | Phe | Asn | Met | Leu | His | Asp | Asn | Ser | Lys |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Pro | Cys | Ile | Ser | Leu | Asn | Gly | Pro | Leu | Ser | Thr | Ser | Arg | His | Val |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Met | Ala | Pro | Val | Met | Ala | His | Val | Asp | Pro | Glu | Glu | Pro | Trp | Ser |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Pro | Cys | Ser | Ala | Arg | Phe | Ile | Thr | Asp | Phe | Leu | Asp | Asn | Gly | Tyr |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Gly | His | Cys | Leu | Leu | Asp | Lys | Pro | Glu | Ala | Pro | Leu | His | Leu | Pro |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Val | Thr | Phe | Pro | Gly | Lys | Asp | Tyr | Asp | Ala | Asp | Arg | Gln | Cys | Gln |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Leu | Thr | Phe | Gly | Pro | Asp | Ser | Arg | His | Cys | Pro | Gln | Leu | Pro | Pro |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Pro | Cys | Ala | Ala | Leu | Trp | Cys | Ser | Gly | His | Leu | Asn | Gly | His | Ala |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Met | Cys | Gln | Thr | Lys | His | Ser | Pro | Trp | Ala | Asp | Gly | Thr | Pro | Cys |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gly | Pro | Ala | Gln | Ala | Cys | Met | Gly | Gly | Arg | Cys | Leu | His | Met | Asp |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gln | Leu | Gln | Asp | Phe | Asn | Ile | Pro | Gln | Ala | Gly | Gly | Trp | Gly | Pro |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Trp | Gly | Pro | Trp | Gly | Asp | Cys | Ser | Arg | Thr | Cys | Gly | Gly | Gly | Val |

| | | |
|-------------------------------------|-------------------------|-----|
| 530 | 535 | 540 |
| Gln Phe Ser Ser Arg Asp Cys Thr Arg | Pro Val Pro Arg Asn Gly | |
| 545 | 550 | 555 |
| Gly Lys Tyr Cys Glu Gly Arg Arg Thr | Arg Phe Arg Ser Cys Asn | |
| 560 | 565 | 570 |
| Thr Glu Asp Cys Pro Thr Gly Ser Ala | Leu Thr Phe Arg Glu Glu | |
| 575 | 580 | 585 |
| Gln Cys Ala Ala Tyr Asn His Arg Thr | Asp Leu Phe Lys Ser Phe | |
| 590 | 595 | 600 |
| Pro Gly Pro Met Asp Trp Val Pro Arg | Tyr Thr Gly Val Ala Pro | |
| 605 | 610 | 615 |
| Gln Asp Gln Cys Lys Leu Thr Cys Gln | Ala Arg Ala Leu Gly Tyr | |
| 620 | 625 | 630 |
| Tyr Tyr Val Leu Glu Pro Arg Val Val | Asp Gly Thr Pro Cys Ser | |
| 635 | 640 | 645 |
| Pro Asp Ser Ser Ser Val Cys Val Gln | Gly Arg Cys Ile His Ala | |
| 650 | 655 | 660 |
| Gly Cys Asp Arg Ile Ile Gly Ser Lys | Lys Lys Phe Asp Lys Cys | |
| 665 | 670 | 675 |
| Met Val Cys Gly Gly Asp Gly Ser Gly | Cys Ser Lys Gln Ser Gly | |
| 680 | 685 | 690 |
| Ser Phe Arg Lys Phe Arg Tyr Gly Tyr | Asn Asn Val Val Thr Ile | |
| 695 | 700 | 705 |
| Pro Ala Gly Ala Thr His Ile Leu Val | Arg Gln Gln Gly Asn Pro | |
| 710 | 715 | 720 |
| Gly His Arg Ser Ile Tyr Leu Ala Leu | Lys Leu Pro Asp Gly Ser | |
| 725 | 730 | 735 |
| Tyr Ala Leu Asn Gly Glu Tyr Thr Leu | Met Pro Ser Pro Thr Asp | |
| 740 | 745 | 750 |
| Val Val Leu Pro Gly Ala Val Ser Leu | Arg Tyr Ser Gly Ala Thr | |
| 755 | 760 | 765 |
| Ala Ala Ser Glu Thr Leu Ser Gly His | Gly Pro Leu Ala Gln Pro | |
| 770 | 775 | 780 |
| Leu Thr Leu Gln Val Leu Val Ala Gly | Asn Pro Gln Asp Thr Arg | |
| 785 | 790 | 795 |
| Leu Arg Tyr Ser Phe Phe Val Pro Arg | Pro Thr Pro Ser Thr Pro | |
| 800 | 805 | 810 |
| Arg Pro Thr Pro Gln Asp Trp Leu His | Arg Arg Ala Gln Ile Leu | |

815

820

825

Glu Ile Leu Arg Arg Arg Pro Trp Ala Gly Arg Lys
 830 835

<210> 318

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ccctgaagct gccagatggc tcc 23

<210> 319

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctgtgctctt cggtgcagcc agtc 24

<210> 320

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

ccacagatgt ggtactgcct ggggcagtca gcttgcgcta cag 43

<210> 321

<211> 1197

<212> DNA

<213> Homo sapiens

<400> 321

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ctaaatgcag aagcttttaa atccaagaaa atatgtaaat cacttaagat 150

ttgtggactg gtgttttgta tcttgccct aactctaatt gtctgtttt 200

gggggagcaa gcacttctgg ccggaggtac caaaaaagc ctatgacatg 250

gagcacactt totacagcaa tggagagaag aagaagattt acatggaaat 300

tgatcctgtg accagaactg aaatattcag aagcggaaat ggactgatg 350

aaacattgga agtgcacgac tttaaaaacg gatacactgg catctacttc 400
 gtgggtcttc aaaaatgttt tatcaaaact cagattaaag tgattcctga 450
 attttctgaa ccagaagagg aaatagatga gaatgaagaa attaccacaa 500
 ctttctttga acagtcaagt atttgggtcc cagcagaaaa gcctattgaa 550
 aaccgagatt ttcttaaaaa ttccaaaatt ctggagattt gtgataacgt 600
 gaccatgtat tggatcaatc ccactcta atcagtttct gagttacaag 650
 actttgagga ggagggagaa gatcttcact ttctgcca cgaaaaaaaa 700
 gggattgaac aaaatgaaca gtgggtggtc cctcaagtga aagtagagaa 750
 gacccgtcac gccagacaag caagtgagga agaacttcca ataatgact 800
 atactgaaaa tggaatagaa ttgatccca tgctggatga gagaggttat 850
 tgttgtatct actgccgtcg aggcaaccgc tattgccgcc gcgtctgtga 900
 acctttacta ggctactacc catatccata ctgctaccaa ggaggacgag 950
 tcatctgtcg tgtcatcatg ccttgtaact ggtgggtggc ccgcatgctg 1000
 gggaggggtct aataggaggt ttgagctcaa atgcttaaac tgctggcaac 1050
 atataataaaa tgcattgctat tcaatgaatt tctgcctatg aggcattctg 1100
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 tgttctaata aacttctaca ttatcaccaa aaaaaaaaaa aaaaaaa 1197

<210> 322

<211> 317

<212> PRT

<213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Lys | Asn | Pro | Pro | Glu | Asn | Cys | Glu | Asp | Cys | His | Ile | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Asn | Ala | Glu | Ala | Phe | Lys | Ser | Lys | Lys | Ile | Cys | Lys | Ser | Leu | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ile | Cys | Gly | Leu | Val | Phe | Gly | Ile | Leu | Ala | Leu | Thr | Leu | Ile | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Phe | Trp | Gly | Ser | Lys | His | Phe | Trp | Pro | Glu | Val | Pro | Lys | Lys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Tyr | Asp | Met | Glu | His | Thr | Phe | Tyr | Ser | Asn | Gly | Glu | Lys | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Ile | Tyr | Met | Glu | Ile | Asp | Pro | Val | Thr | Arg | Thr | Glu | Ile | Phe |

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Arg | Ser | Gly | Asn | Gly | Thr | Asp | Glu | Thr | Leu | Glu | Val | His | Asp | Phe | | | | | |
| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
| Lys | Asn | Gly | Tyr | Thr | Gly | Ile | Tyr | Phe | Val | Gly | Leu | Gln | Lys | Cys | | | | | |
| 110 | | | | | | | | | | 115 | | | | | 120 | | | | |
| Phe | Ile | Lys | Thr | Gln | Ile | Lys | Val | Ile | Pro | Glu | Phe | Ser | Glu | Pro | | | | | |
| 125 | | | | | | | | | | 130 | | | | | 135 | | | | |
| Glu | Glu | Glu | Ile | Asp | Glu | Asn | Glu | Glu | Ile | Thr | Thr | Thr | Phe | Phe | | | | | |
| 140 | | | | | | | | | | 145 | | | | | 150 | | | | |
| Glu | Gln | Ser | Val | Ile | Trp | Val | Pro | Ala | Glu | Lys | Pro | Ile | Glu | Asn | | | | | |
| 155 | | | | | | | | | | 160 | | | | | 165 | | | | |
| Arg | Asp | Phe | Leu | Lys | Asn | Ser | Lys | Ile | Leu | Glu | Ile | Cys | Asp | Asn | | | | | |
| 170 | | | | | | | | | | 175 | | | | | 180 | | | | |
| Val | Thr | Met | Tyr | Trp | Ile | Asn | Pro | Thr | Leu | Ile | Ser | Val | Ser | Glu | | | | | |
| 185 | | | | | | | | | | 190 | | | | | 195 | | | | |
| Leu | Gln | Asp | Phe | Glu | Glu | Glu | Gly | Glu | Asp | Leu | His | Phe | Pro | Ala | | | | | |
| 200 | | | | | | | | | | 205 | | | | | 210 | | | | |
| Asn | Glu | Lys | Lys | Gly | Ile | Glu | Gln | Asn | Glu | Gln | Trp | Val | Val | Pro | | | | | |
| 215 | | | | | | | | | | 220 | | | | | 225 | | | | |
| Gln | Val | Lys | Val | Glu | Lys | Thr | Arg | His | Ala | Arg | Gln | Ala | Ser | Glu | | | | | |
| 230 | | | | | | | | | | 235 | | | | | 240 | | | | |
| Glu | Glu | Leu | Pro | Ile | Asn | Asp | Tyr | Thr | Glu | Asn | Gly | Ile | Glu | Phe | | | | | |
| 245 | | | | | | | | | | 250 | | | | | 255 | | | | |
| Asp | Pro | Met | Leu | Asp | Glu | Arg | Gly | Tyr | Cys | Cys | Ile | Tyr | Cys | Arg | | | | | |
| 260 | | | | | | | | | | 265 | | | | | 270 | | | | |
| Arg | Gly | Asn | Arg | Tyr | Cys | Arg | Arg | Val | Cys | Glu | Pro | Leu | Leu | Gly | | | | | |
| 275 | | | | | | | | | | 280 | | | | | 285 | | | | |
| Tyr | Tyr | Pro | Tyr | Pro | Tyr | Cys | Tyr | Gln | Gly | Gly | Arg | Val | Ile | Cys | | | | | |
| 290 | | | | | | | | | | 295 | | | | | 300 | | | | |
| Arg | Val | Ile | Met | Pro | Cys | Asn | Trp | Trp | Val | Ala | Arg | Met | Leu | Gly | | | | | |
| 305 | | | | | | | | | | 310 | | | | | 315 | | | | |

Arg Val

<210> 323

<211> 1174

<212> DNA

<213> Homo sapiens

<400> 323

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ggccgtgcag cttctgggct tcttgctcag cttcctgggc atggtgggca 150
cgttgatcac caccatcctg ccgcactggc ggaggacagc gcacgtgggc 200
accaacatcc tcacggccgt gtcctacctg aaagggctct ggatggagtg 250
tgtgtggcac agcacaggca tctaccagtg ccagatctac cgatccctgc 300
tggcgctgcc ccaagacctc caggctgccc gcgccctcat ggtcatctcc 350
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cacgcgctgc gccaaaggga caccgcgcaa gaccaccttt gccatcctcg 450
gcggcaccct cttcatcctg gccggcctcc tgtgcatggg ggccgtctcc 500
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ttctgggcaa tttttgtatc caaggaaata atgtgaatgc gaggaaatgt 950
ctttagagca caggacaga gggggaaata agaggaggag aaagctctct 1000
ataccaaaga ctgaaaaaaaa aaatcctgtc tgtttttgta tttattatat 1050
atatttatgt ggggtgatttg ataacaagtt taatataaag tgacttggga 1100
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<210> 324

<211> 239

<212> PRT

<213> Homo sapiens

<400> 324

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Thr | Ala | Val | Gln | Leu | Leu | Gly | Phe | Leu | Leu | Ser | Phe |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

Leu Gly Met Val Gly Thr Leu Ile Thr Thr Ile Leu Pro His Trp

| | 20 | 25 | 30 |
|---|-----|-----|-----|
| Arg Arg Thr Ala His Val Gly Thr Asn Ile Leu Thr Ala Val Ser | 35 | 40 | 45 |
| Tyr Leu Lys Gly Leu Trp Met Glu Cys Val Trp His Ser Thr Gly | 50 | 55 | 60 |
| Ile Tyr Gln Cys Gln Ile Tyr Arg Ser Leu Leu Ala Leu Pro Gln | 65 | 70 | 75 |
| Asp Leu Gln Ala Ala Arg Ala Leu Met Val Ile Ser Cys Leu Leu | 80 | 85 | 90 |
| Ser Gly Ile Ala Cys Ala Cys Ala Val Ile Gly Met Lys Cys Thr | 95 | 100 | 105 |
| Arg Cys Ala Lys Gly Thr Pro Ala Lys Thr Thr Phe Ala Ile Leu | 110 | 115 | 120 |
| Gly Gly Thr Leu Phe Ile Leu Ala Gly Leu Leu Cys Met Val Ala | 125 | 130 | 135 |
| Val Ser Trp Thr Thr Asn Asp Val Val Gln Asn Phe Tyr Asn Pro | 140 | 145 | 150 |
| Leu Leu Pro Ser Gly Met Lys Phe Glu Ile Gly Gln Ala Leu Tyr | 155 | 160 | 165 |
| Leu Gly Phe Ile Ser Ser Ser Leu Ser Leu Ile Gly Gly Thr Leu | 170 | 175 | 180 |
| Leu Cys Leu Ser Cys Gln Asp Glu Ala Pro Tyr Arg Pro Tyr Gln | 185 | 190 | 195 |
| Ala Pro Pro Arg Ala Thr Thr Thr Thr Ala Asn Thr Ala Pro Ala | 200 | 205 | 210 |
| Tyr Gln Pro Pro Ala Ala Tyr Lys Asp Asn Arg Ala Pro Ser Val | 215 | 220 | 225 |
| Thr Ser Ala Thr His Ser Gly Tyr Arg Leu Asn Asp Tyr Val | 230 | 235 | |

<210> 325

<211> 2121

<212> DNA

<213> Homo sapiens

<400> 325

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gcacgcgggc caccgggatg gacatgtgga gcaccagga cctgtacgac 200

aacccccgtca cctccgtggt ccagtacgaa gggctctgga ggagctgcgt 250
gaggcagagt tcaggcttca ccgaatgcag gccctatttc accatcctgg 300
gacttccagc catgctgcag gcagtgcgag ccctgatgat cgtaggcatac 350
gtcctgggtg ccattggcct cctggtatcc atctttgccc tgaaatgcat 400
ccgcattggc agcatggagg actctgcca agccaacatg aactgacct 450
ccgggatcat gttcattgtc tcaggctctt gtgcaattgc tggagtgtct 500
gtgtttgcca acatgctggt gactaacttc tggatgtcca cagctaacat 550
gtacaccggc atgggtggga tggcgcagac tgttcagacc aggtacacat 600
ttggtgcggc tctgttcgtg ggctgggtcg ctggaggcct cacactaatt 650
gggggtgtga tgatgtgcat cgctgccgg ggctggcac cagaagaaac 700
caactacaaa gccgtttctt atcatgcctc aggccacagt gttgcctaca 750
agcctggagg cttcaaggcc agcactggct ttgggtccaa caccaaaaac 800
aagaagatat acgatggagg tgccgcaca gaggacgagg tacaatctta 850
tccttccaag cagcactatg tgtaatgctc taagacctct cagcacgggc 900
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atttcttctt gcttttgact cacagctgga agttagaaaa gcctcgattt 1000
catctttgga gaggccaaat ggtcttagcc tcagtctctg tctctaaata 1050
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ttctgctgtt tgaattttgt cccccaccc ccaacttggc tagtaataaa 1350
cacttactga agaagaagca ataagagaaa gatatttgta atctctccag 1400
cccatgatct cggttttctt aactgtgat cttaaaagtt accaaaccaa 1450
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 aaaaaatcag ccagtcatgg tggcatacac ctgtagtccc agcattccgg 1950
 gaggctgagg tgggaggatc acttgagccc agggagggtg gggctgcagt 2000
 gagccatgat cacaccactg cactccagcc aggtgacata gcgagatcct 2050
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<210> 326
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 326

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Thr | Thr | Cys | Gln | Val | Val | Ala | Phe | Leu | Leu | Ser | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Leu | Ala | Gly | Cys | Ile | Ala | Ala | Thr | Gly | Met | Asp | Met | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Thr | Gln | Asp | Leu | Tyr | Asp | Asn | Pro | Val | Thr | Ser | Val | Phe | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Glu | Gly | Leu | Trp | Arg | Ser | Cys | Val | Arg | Gln | Ser | Ser | Gly | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Glu | Cys | Arg | Pro | Tyr | Phe | Thr | Ile | Leu | Gly | Leu | Pro | Ala | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gln | Ala | Val | Arg | Ala | Leu | Met | Ile | Val | Gly | Ile | Val | Leu | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ala | Ile | Gly | Leu | Leu | Val | Ser | Ile | Phe | Ala | Leu | Lys | Cys | Ile | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Gly | Ser | Met | Glu | Asp | Ser | Ala | Lys | Ala | Asn | Met | Thr | Leu | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Gly | Ile | Met | Phe | Ile | Val | Ser | Gly | Leu | Cys | Ala | Ile | Ala | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Ser | Val | Phe | Ala | Asn | Met | Leu | Val | Thr | Asn | Phe | Trp | Met | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Asn | Met | Tyr | Thr | Gly | Met | Gly | Gly | Met | Val | Gln | Thr | Val |
| | | | | 155 | | | | | | 160 | | | | 165 |
| Gln | Thr | Arg | Tyr | Thr | Phe | Gly | Ala | Ala | Leu | Phe | Val | Gly | Trp | Val |
| | | | | 170 | | | | | | 175 | | | | 180 |
| Ala | Gly | Gly | Leu | Thr | Leu | Ile | Gly | Gly | Val | Met | Met | Cys | Ile | Ala |
| | | | | 185 | | | | | | 190 | | | | 195 |
| Cys | Arg | Gly | Leu | Ala | Pro | Glu | Glu | Thr | Asn | Tyr | Lys | Ala | Val | Ser |
| | | | | 200 | | | | | | 205 | | | | 210 |
| Tyr | His | Ala | Ser | Gly | His | Ser | Val | Ala | Tyr | Lys | Pro | Gly | Gly | Phe |
| | | | | 215 | | | | | | 220 | | | | 225 |
| Lys | Ala | Ser | Thr | Gly | Phe | Gly | Ser | Asn | Thr | Lys | Asn | Lys | Lys | Ile |
| | | | | 230 | | | | | | 235 | | | | 240 |
| Tyr | Asp | Gly | Gly | Ala | Arg | Thr | Glu | Asp | Glu | Val | Gln | Ser | Tyr | Pro |
| | | | | 245 | | | | | | 250 | | | | 255 |
| Ser | Lys | His | Asp | Tyr | Val | | | | | | | | | |
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<210> 327

<211> 2010

<212> DNA

<213> Homo sapiens

<400> 327

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<211> 225
 <212> PRT
 <213> Homo sapiens

<400> 328

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Thr | His | Ala | Leu | Glu | Ile | Ala | Gly | Leu | Phe | Leu | Gly | Gly | 1 | 5 | 10 | 15 |
| Val | Gly | Met | Val | Gly | Thr | Val | Ala | Val | Thr | Val | Met | Pro | Gln | Trp | 20 | 25 | 30 | |
| Arg | Val | Ser | Ala | Phe | Ile | Glu | Asn | Asn | Ile | Val | Val | Phe | Glu | Asn | 35 | 40 | 45 | |
| Phe | Trp | Glu | Gly | Leu | Trp | Met | Asn | Cys | Val | Arg | Gln | Ala | Asn | Ile | 50 | 55 | 60 | |
| Arg | Met | Gln | Cys | Lys | Ile | Tyr | Asp | Ser | Leu | Leu | Ala | Leu | Ser | Pro | 65 | 70 | 75 | |
| Asp | Leu | Gln | Ala | Ala | Arg | Gly | Leu | Met | Cys | Ala | Ala | Ser | Val | Met | 80 | 85 | 90 | |
| Ser | Phe | Leu | Ala | Phe | Met | Met | Ala | Ile | Leu | Gly | Met | Lys | Cys | Thr | 95 | 100 | 105 | |
| Arg | Cys | Thr | Gly | Asp | Asn | Glu | Lys | Val | Lys | Ala | His | Ile | Leu | Leu | 110 | 115 | 120 | |
| Thr | Ala | Gly | Ile | Ile | Phe | Ile | Ile | Thr | Gly | Met | Val | Val | Leu | Ile | 125 | 130 | 135 | |
| Pro | Val | Ser | Trp | Val | Ala | Asn | Ala | Ile | Ile | Arg | Asp | Phe | Tyr | Asn | 140 | 145 | 150 | |
| Ser | Ile | Val | Asn | Val | Ala | Gln | Lys | Arg | Glu | Leu | Gly | Glu | Ala | Leu | 155 | 160 | 165 | |
| Tyr | Leu | Gly | Trp | Thr | Thr | Ala | Leu | Val | Leu | Ile | Val | Gly | Gly | Ala | 170 | 175 | 180 | |
| Leu | Phe | Cys | Cys | Val | Phe | Cys | Cys | Asn | Glu | Lys | Ser | Ser | Ser | Tyr | 185 | 190 | 195 | |
| Arg | Tyr | Ser | Ile | Pro | Ser | His | Arg | Thr | Thr | Gln | Lys | Ser | Tyr | His | 200 | 205 | 210 | |
| Thr | Gly | Lys | Lys | Ser | Pro | Ser | Val | Tyr | Ser | Arg | Ser | Gln | Tyr | Val | 215 | 220 | 225 | |

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 <212> DNA
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<400> 329

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 gcctgtggat gtccctgcgtg gtgcagagca ccggccagat gcagtgcaag 200
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<210> 330
 <211> 220
 <212> PRT
 <213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Ala | Gly | Met | Gln | Ile | Leu | Gly | Val | Val | Leu | Thr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Trp | Val | Asn | Gly | Leu | Val | Ser | Cys | Ala | Leu | Pro | Met | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Val | Thr | Ala | Phe | Ile | Gly | Asn | Ser | Ile | Val | Val | Ala | Gln | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Trp | Glu | Gly | Leu | Trp | Met | Ser | Cys | Val | Val | Gln | Ser | Thr | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Met | Gln | Cys | Lys | Val | Tyr | Asp | Ser | Leu | Leu | Ala | Leu | Pro | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Leu | Gln | Ala | Ala | Arg | Ala | Leu | Cys | Val | Ile | Ala | Leu | Leu | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ala | Leu | Phe | Gly | Leu | Leu | Val | Tyr | Leu | Ala | Gly | Ala | Lys | Cys | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Cys | Val | Glu | Glu | Lys | Asp | Ser | Lys | Ala | Arg | Leu | Val | Leu | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Gly | Ile | Val | Phe | Val | Ile | Ser | Gly | Val | Leu | Thr | Leu | Ile | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Cys | Trp | Thr | Ala | His | Ala | Ile | Ile | Arg | Asp | Phe | Tyr | Asn | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Val | Ala | Glu | Ala | Gln | Lys | Arg | Glu | Leu | Gly | Ala | Ser | Leu | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gly | Trp | Ala | Ala | Ser | Gly | Leu | Leu | Leu | Leu | Gly | Gly | Gly | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Cys | Cys | Thr | Cys | Pro | Ser | Gly | Gly | Ser | Gln | Gly | Pro | Ser | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Tyr | Met | Ala | Arg | Tyr | Ser | Thr | Ser | Ala | Pro | Ala | Ile | Ser | Arg | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Ser | Glu | Tyr | Pro | Thr | Lys | Asn | Tyr | Val | | | | | |
| | | | | 215 | | | | | 220 | | | | | |

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<211> 1160

<212> DNA

<213> Homo sapiens

<400> 331

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 gttccttggc atggtgggga ctcttgccac aacccttctg cctcagtgg 200
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 caagtgtaca atgatggact acttattact ttttgacat catgtattat 1100
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<210> 332

<211> 173

<212> PRT

<213> Homo sapiens

<400> 332

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Cys | Ile | Arg | Gln | Ala | Arg | Val | Arg | Leu | Gln | Cys | Lys | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ser | Ser | Leu | Leu | Ala | Leu | Pro | Pro | Ala | Leu | Glu | Thr | Ala | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Met | Cys | Val | Ala | Val | Ala | Leu | Ser | Leu | Ile | Ala | Leu | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 35 | 40 | 45 |
|---|-----|-----|-----|
| Ile Gly Ile Cys Gly Met Lys Gln Val Gln Cys Thr Gly Ser Asn | 50 | 55 | 60 |
| Glu Arg Ala Lys Ala Tyr Leu Leu Gly Thr Ser Gly Val Leu Phe | 65 | 70 | 75 |
| Ile Leu Thr Gly Ile Phe Val Leu Ile Pro Val Ser Trp Thr Ala | 80 | 85 | 90 |
| Asn Ile Ile Ile Arg Asp Phe Tyr Asn Pro Ala Ile His Ile Gly | 95 | 100 | 105 |
| Gln Lys Arg Glu Leu Gly Ala Ala Leu Phe Leu Gly Trp Ala Ser | 110 | 115 | 120 |
| Ala Ala Val Leu Phe Ile Gly Gly Gly Leu Leu Cys Gly Phe Cys | 125 | 130 | 135 |
| Cys Cys Asn Arg Lys Lys Gln Gly Tyr Arg Tyr Pro Val Pro Gly | 140 | 145 | 150 |
| Tyr Arg Val Pro His Thr Asp Lys Arg Arg Asn Thr Thr Met Leu | 155 | 160 | 165 |
| Ser Lys Thr Ser Thr Ser Tyr Val | 170 | | |

<210> 333

<211> 535

<212> DNA

<213> Homo sapiens

<400> 333

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<210> 334
<211> 85
<212> PRT
<213> Homo sapiens

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20 25 30
Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
35 40 45
Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
50 55 60
Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
65 70 75
Arg Val Gln Phe Leu His Asp Gly Ser Cys
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<210> 335
<211> 742
<212> DNA
<213> Homo sapiens

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cccgaggtgc agcagtggta ccagcagttt ctctacatgg gctttgatga 350
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<210> 336
<211> 148
<212> PRT
<213> Homo sapiens

<400> 336
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Gly Asn Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val
35 40 45
Pro Thr Lys Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu
50 55 60
Phe Leu Gly Ser Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg
65 70 75
Thr Arg Pro Glu Val Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met
80 85 90
Gly Phe Asp Glu Ala Lys Phe Glu Asp Asp Ile Thr Tyr Trp Leu
95 100 105
Asn Arg Asp Arg Asn Gly His Glu Tyr Tyr Gly Asp Tyr Tyr Gln
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Arg His Tyr Asp Glu Asp Ser Ala Ile Gly Pro Arg Ser Pro Tyr
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Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr
140 145

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<211> 1310
<212> DNA
<213> Homo sapiens

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<210> 338

<211> 246

<212> PRT

<213> Homo sapiens

<400> 338

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Leu | Ile | Glu | Gly | Val | Gly | Asp | Glu | Val | Thr | Val | Leu | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Leu | Ala | Cys | Leu | Leu | Val | Leu | Ala | Leu | Ala | Trp | Val | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | His | Thr | Ala | Glu | Gly | Gly | Asp | Pro | Leu | Pro | Gln | Pro | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Thr | Pro | Ser | Gln | Pro | Ser | Ala | Ala | Met | Ala | Ala | Thr | Asp | 50 | 55 | 60 |
| Ser | Met | Arg | Gly | Glu | Ala | Pro | Gly | Ala | Glu | Thr | Pro | Ser | Leu | Arg | 65 | 70 | 75 |
| His | Arg | Gly | Gln | Ala | Ala | Gln | Pro | Glu | Pro | Ser | Thr | Gly | Phe | Thr | 80 | 85 | 90 |
| Ala | Thr | Pro | Pro | Ala | Pro | Asp | Ser | Pro | Gln | Glu | Pro | Leu | Val | Leu | 95 | 100 | 105 |
| Arg | Leu | Lys | Phe | Leu | Asn | Asp | Ser | Glu | Gln | Val | Ala | Arg | Ala | Trp | 110 | 115 | 120 |
| Pro | His | Asp | Thr | Ile | Gly | Ser | Leu | Lys | Arg | Thr | Gln | Phe | Pro | Gly | 125 | 130 | 135 |
| Arg | Glu | Gln | Gln | Val | Arg | Leu | Ile | Tyr | Gln | Gly | Gln | Leu | Leu | Gly | 140 | 145 | 150 |
| Asp | Asp | Thr | Gln | Thr | Leu | Gly | Ser | Leu | His | Leu | Pro | Pro | Asn | Cys | 155 | 160 | 165 |
| Val | Leu | His | Cys | His | Val | Ser | Thr | Arg | Val | Gly | Pro | Pro | Asn | Pro | 170 | 175 | 180 |
| Pro | Cys | Pro | Pro | Gly | Ser | Glu | Pro | Gly | Pro | Ser | Gly | Leu | Glu | Ile | 185 | 190 | 195 |
| Gly | Ser | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | 200 | 205 | 210 |
| Trp | Tyr | Cys | Gln | Ile | Gln | Tyr | Arg | Pro | Phe | Phe | Pro | Leu | Thr | Ala | 215 | 220 | 225 |
| Thr | Leu | Gly | Leu | Ala | Gly | Phe | Thr | Leu | Leu | Leu | Ser | Leu | Leu | Ala | 230 | 235 | 240 |
| Phe | Ala | Met | Tyr | Arg | Pro | | | | | | | | | | 245 | | |

<210> 339

<211> 849

<212> DNA

<213> Homo sapiens

<400> 339

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atgacaaagg cgctactcat ctatttggtc agcagctttc ttgccctaaa 200

tcaggccagc ctcacagtc gctgtgactt ggcccagtg ctgcagctgg 250

aggacttggg tgggtttgag gggtactccc tgagtgactg gctgtgcctg 300
 gcttttgtgg aaagcaagtt caacatatca aagataaatg aaaatgcgga 350
 tggaagcttt gactatggcc tttccagat caacagccac tactggtgca 400
 acgattataa gagttactcg gaaaaccttt gccacgtaga ctgtcaagat 450
 ctgctgaatc ccaaccttct tgcaggcatc cactgcgcaa aaaggattgt 500
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<210> 340
 <211> 148
 <212> PRT
 <213> Homo sapiens

<400> 340

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Thr | Lys | Ala | Leu | Leu | Ile | Tyr | Leu | Val | Ser | Ser | Phe | Leu | Ala | 1 | 5 | 10 | 15 |
| Leu | Asn | Gln | Ala | Ser | Leu | Ile | Ser | Arg | Cys | Asp | Leu | Ala | Gln | Val | 20 | 25 | 30 | |
| Leu | Gln | Leu | Glu | Asp | Leu | Asp | Gly | Phe | Glu | Gly | Tyr | Ser | Leu | Ser | 35 | 40 | 45 | |
| Asp | Trp | Leu | Cys | Leu | Ala | Phe | Val | Glu | Ser | Lys | Phe | Asn | Ile | Ser | 50 | 55 | 60 | |
| Lys | Ile | Asn | Glu | Asn | Ala | Asp | Gly | Ser | Phe | Asp | Tyr | Gly | Leu | Phe | 65 | 70 | 75 | |
| Gln | Ile | Asn | Ser | His | Tyr | Trp | Cys | Asn | Asp | Tyr | Lys | Ser | Tyr | Ser | 80 | 85 | 90 | |
| Glu | Asn | Leu | Cys | His | Val | Asp | Cys | Gln | Asp | Leu | Leu | Asn | Pro | Asn | 95 | 100 | 105 | |
| Leu | Leu | Ala | Gly | Ile | His | Cys | Ala | Lys | Arg | Ile | Val | Ser | Gly | Ala | 110 | 115 | 120 | |
| Arg | Gly | Met | Asn | Asn | Trp | Val | Glu | Trp | Arg | Leu | His | Cys | Ser | Gly | 125 | 130 | 135 | |

Arg Pro Leu Ser Tyr Trp Leu Thr Gly Cys Arg Leu Arg
140 145

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<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 341

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<210> 342

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 342

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<210> 343

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 343

atctcaggcg gcatcctgtc agcc 24

<210> 344

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

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<210> 345

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 345

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<210> 346

<211> 2575

<212> DNA

<213> Homo sapiens

<400> 346

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actgagaacc caccagctca tcccagacac ctcatagcaa cctatttata 100
caaaggggga aagaaacacc tgagcagaat ggaatcatta tttttttccc 150
aaggagaaaa ccggggtaaa gggaggggaag caattcaatt tgaagtcctt 200
gtgaatgggc tttcagaagg caattaaaga aatccactca gagaggactt 250
ggggtgaaac ttgggtcctg tggttttctg attgtaagtg gaagcaggtc 300
ttgcacacgc tgttggcaaa tgtcaggacc aggttaagtg actggcagaa 350
aaacttccag gtggaacaag caacccatgt tctgctgcaa gcttgaagga 400
gcctggagcg ggagaaagct aacttgaaca tgacctgttg catttggcaa 450
gttctagcaa catgctccta aggaagcgat acaggcacag accatgcaga 500
ctccagttcc tcctgctgct cctgatgctg ggatgctgcc tgatgatggg 550
ggcgatgttg caccctcccc accacaccct gcaccagact gtcacagccc 600
aagccagcaa gcacagccct gaagccaggt accgcctgga ctttggggaa 650
tcccaggatt ggggtactgga agctgaggat gagggtgaag agtacagccc 700
tctggagggc ctgccaccct ttatctcact gcgggaggat cagctgctgg 750
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ggtgggagct accgcctcat caagcagcca aggaggcagg ataaggaagc 850
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gggttgctcg acattccact ggtttctggc taatgtctac cctgagctgt 1950
acccatctga acccaggccc agtttctctg gaaagctcca caaactgga 2000
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<210> 347

<211> 639

<212> PRT

<213> Homo sapiens

<400> 347

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Leu | Arg | Lys | Arg | Tyr | Arg | His | Arg | Pro | Cys | Arg | Leu | Gln | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Gly | Cys | Val | Leu | Met | Met | Val | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ala | Met | Leu | His | Pro | Pro | His | His | Thr | Leu | His | Gln | Thr | Val | Thr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Gln | Ala | Ser | Lys | His | Ser | Pro | Glu | Ala | Arg | Tyr | Arg | Leu | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Phe | Gly | Glu | Ser | Gln | Asp | Trp | Val | Leu | Glu | Ala | Glu | Asp | Glu | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Glu | Glu | Tyr | Ser | Pro | Leu | Glu | Gly | Leu | Pro | Pro | Phe | Ile | Ser | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Arg | Glu | Asp | Gln | Leu | Leu | Val | Ala | Val | Ala | Leu | Pro | Gln | Ala | Arg | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Asn | Gln | Ser | Gln | Gly | Arg | Arg | Gly | Gly | Ser | Tyr | Arg | Leu | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Gln | Pro | Arg | Arg | Gln | Asp | Lys | Glu | Ala | Pro | Lys | Arg | Asp | Trp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ala | Asp | Glu | Asp | Gly | Glu | Val | Ser | Glu | Glu | Glu | Glu | Leu | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Phe | Ser | Leu | Asp | Pro | Arg | Gly | Leu | Gln | Glu | Ala | Leu | Ser | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Arg | Ile | Pro | Leu | Gln | Arg | Ala | Leu | Pro | Glu | Val | Arg | His | Pro | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Leu | Gln | Gln | His | Pro | Gln | Asp | Ser | Leu | Pro | Thr | Ala | Ser | Val | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Leu | Cys | Phe | His | Asp | Glu | Ala | Trp | Ser | Thr | Leu | Leu | Arg | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | His | Ser | Ile | Leu | Asp | Thr | Val | Pro | Arg | Ala | Phe | Leu | Lys | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ile | Ile | Leu | Val | Asp | Asp | Leu | Ser | Gln | Gln | Gly | Gln | Leu | Lys | Ser | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Leu | Ser | Glu | Tyr | Val | Ala | Arg | Leu | Glu | Gly | Val | Lys | Leu | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ser | Asn | Lys | Arg | Leu | Gly | Ala | Ile | Arg | Ala | Arg | Met | Leu | Gly | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | |
|---|-----|-----|-----|
| Ala Thr Arg Ala Thr Gly Asp Val Leu Val Phe Met Asp Ala His | 275 | 280 | 285 |
| Cys Glu Cys His Pro Gly Trp Leu Glu Pro Leu Leu Ser Arg Ile | 290 | 295 | 300 |
| Ala Gly Asp Arg Ser Arg Val Val Ser Pro Val Ile Asp Val Ile | 305 | 310 | 315 |
| Asp Trp Lys Thr Phe Gln Tyr Tyr Pro Ser Lys Asp Leu Gln Arg | 320 | 325 | 330 |
| Gly Val Leu Asp Trp Lys Leu Asp Phe His Trp Glu Pro Leu Pro | 335 | 340 | 345 |
| Glu His Val Arg Lys Ala Leu Gln Ser Pro Ile Ser Pro Ile Arg | 350 | 355 | 360 |
| Ser Pro Val Val Pro Gly Glu Val Val Ala Met Asp Arg His Tyr | 365 | 370 | 375 |
| Phe Gln Asn Thr Gly Ala Tyr Asp Ser Leu Met Ser Leu Arg Gly | 380 | 385 | 390 |
| Gly Glu Asn Leu Glu Leu Ser Phe Lys Ala Trp Leu Cys Gly Gly | 395 | 400 | 405 |
| Ser Val Glu Ile Leu Pro Cys Ser Arg Val Gly His Ile Tyr Gln | 410 | 415 | 420 |
| Asn Gln Asp Ser His Ser Pro Leu Asp Gln Glu Ala Thr Leu Arg | 425 | 430 | 435 |
| Asn Arg Val Arg Ile Ala Glu Thr Trp Leu Gly Ser Phe Lys Glu | 440 | 445 | 450 |
| Thr Phe Tyr Lys His Ser Pro Glu Ala Phe Ser Leu Ser Lys Ala | 455 | 460 | 465 |
| Glu Lys Pro Asp Cys Met Glu Arg Leu Gln Leu Gln Arg Arg Leu | 470 | 475 | 480 |
| Gly Cys Arg Thr Phe His Trp Phe Leu Ala Asn Val Tyr Pro Glu | 485 | 490 | 495 |
| Leu Tyr Pro Ser Glu Pro Arg Pro Ser Phe Ser Gly Lys Leu His | 500 | 505 | 510 |
| Asn Thr Gly Leu Gly Leu Cys Ala Asp Cys Gln Ala Glu Gly Asp | 515 | 520 | 525 |
| Ile Leu Gly Cys Pro Met Val Leu Ala Pro Cys Ser Asp Ser Arg | 530 | 535 | 540 |
| Gln Gln Gln Tyr Leu Gln His Thr Ser Arg Lys Glu Ile His Phe | 545 | 550 | 555 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Pro | Gln | His | Leu | Cys | Phe | Ala | Val | Arg | Gln | Glu | Gln | Val |
| | | | | 560 | | | | | 565 | | | | | 570 |
| | | | | | | | | | | | | | | |
| Ile | Leu | Gln | Asn | Cys | Thr | Glu | Glu | Gly | Leu | Ala | Ile | His | Gln | Gln |
| | | | | 575 | | | | | 580 | | | | | 585 |
| | | | | | | | | | | | | | | |
| His | Trp | Asp | Phe | Gln | Glu | Asn | Gly | Met | Ile | Val | His | Ile | Leu | Ser |
| | | | | 590 | | | | | 595 | | | | | 600 |
| | | | | | | | | | | | | | | |
| Gly | Lys | Cys | Met | Glu | Ala | Val | Val | Gln | Glu | Asn | Asn | Lys | Asp | Leu |
| | | | | 605 | | | | | 610 | | | | | 615 |
| | | | | | | | | | | | | | | |
| Tyr | Leu | Arg | Pro | Cys | Asp | Gly | Lys | Ala | Arg | Gln | Gln | Trp | Arg | Phe |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Asp | Gln | Ile | Asn | Ala | Val | Asp | Glu | Arg | | | | | | |
| | | | | 635 | | | | | | | | | | |

<210> 348

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 348

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<210> 349

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 349

ctgtcactgc aaggagccaa cacc 24

<210> 350

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 350

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<210> 351

<211> 2524

<212> DNA

<213> Homo sapiens

<400> 351

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tccctctctg gccactgctg ttgctgcccc tcccaccgcc tgctcagggc 150
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tcaaataaag ctttgcaag ataa 2524

<210> 352

<211> 243

<212> PRT

<213> Homo sapiens

<400> 352

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Pro | Gln | Gly | Pro | Ala | Ala | Ser | Pro | Gln | Arg | Leu | Arg | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| | | | | | | | | | | | | | | |
| Leu | Leu | Leu | Leu | Leu | Leu | Leu | Gln | Leu | Pro | Ala | Pro | Ser | Ser | Ala |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Ile | Pro | Lys | Gly | Lys | Gln | Lys | Ala | Gln | Leu | Arg | Gln | Arg | 35 | 40 | 45 |
| Glu | Val | Val | Asp | Leu | Tyr | Asn | Gly | Met | Cys | Leu | Gln | Gly | Pro | Ala | 50 | 55 | 60 |
| Gly | Val | Pro | Gly | Arg | Asp | Gly | Ser | Pro | Gly | Ala | Asn | Val | Ile | Pro | 65 | 70 | 75 |
| Gly | Thr | Pro | Gly | Ile | Pro | Gly | Arg | Asp | Gly | Phe | Lys | Gly | Glu | Lys | 80 | 85 | 90 |
| Gly | Glu | Cys | Leu | Arg | Glu | Ser | Phe | Glu | Glu | Ser | Trp | Thr | Pro | Asn | 95 | 100 | 105 |
| Tyr | Lys | Gln | Cys | Ser | Trp | Ser | Ser | Leu | Asn | Tyr | Gly | Ile | Asp | Leu | 110 | 115 | 120 |
| Gly | Lys | Ile | Ala | Glu | Cys | Thr | Phe | Thr | Lys | Met | Arg | Ser | Asn | Ser | 125 | 130 | 135 |
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg | 140 | 145 | 150 |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu | 155 | 160 | 165 |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln | 170 | 175 | 180 |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser | 185 | 190 | 195 |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp | 200 | 205 | 210 |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp | 215 | 220 | 225 |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu | 230 | 235 | 240 |

Leu Pro Lys

<210> 353

<211> 480

<212> DNA

<213> Homo sapiens

<400> 353

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cggccaggat ggcatactgt ctggccctgc gcatggcgct gctgctggtc 100

tccgggggttc tggccctgc ggtgctcaca gacgatgttc cacaggagcc 150

cgtgcccacg ctgtggaacg agccggccga gctgccgtcg ggagaaggcc 200
 ccgtggagag caccagcccc ggccgggagc ccgtggacac cggcccccca 250
 gccccaccg tcgcgccagg acccgaggac agcaccgcgc aggagcggct 300
 ggaccagggc ggccgggtcgc tggggcccgg cgctatcgcg gccatcgtga 350
 tcgccgccct gctggccacc tgcgtggtgc tggcgctcgt ggtcgtcgcg 400
 ctgagaaagt tttctgcctc ctgaagcgaa taaaggggcc gcgcccggcc 450
 gcggcgcgac tcggcaaaaa aaaaaaaaaa 480

<210> 354
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 354
 Met Ala Ser Cys Leu Ala Leu Arg Met Ala Leu Leu Leu Val Ser
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 20 25 30
 Pro Val Pro Thr Leu Trp Asn Glu Pro Ala Glu Leu Pro Ser Gly
 35 40 45
 Glu Gly Pro Val Glu Ser Thr Ser Pro Gly Arg Glu Pro Val Asp
 50 55 60
 Thr Gly Pro Pro Ala Pro Thr Val Ala Pro Gly Pro Glu Asp Ser
 65 70 75
 Thr Ala Gln Glu Arg Leu Asp Gln Gly Gly Gly Ser Leu Gly Pro
 80 85 90
 Gly Ala Ile Ala Ala Ile Val Ile Ala Ala Leu Leu Ala Thr Cys
 95 100 105
 Val Val Leu Ala Leu Val Val Val Ala Leu Arg Lys Phe Ser Ala
 110 115 120
 Ser

<210> 355
 <211> 2134
 <212> DNA
 <213> Homo sapiens

<400> 355
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 gttggccggc ggccgggccgg gacgggcatg gccctgctgc tgtgcctggt 100

gtgcctgacg gcggcgctgg cccacggctg tctgcaactg cacagcaact 150
tctccaagaa gttctccttc taccgccacc atgtgaactt caagtcctgg 200
tggttggtggc acatccccgt gtcaggggcg ctgctcaccg actggagcga 250
cgacacgatg aaggagctgc acctggccat ccccgccaag atcaccggg 300
agaagctgga ccaagtggcg acagcagtgt accagatgat ggatcagctg 350
taccagggga agatgtactt ccccggtat ttcccaacg agctgcgaaa 400
catcttcgg gagcaggtgc acctcatcca gaacgccatc atcgaaaggc 450
acctggcacc aggcagctgg ggaggagggc agctctccag ggagggacc 500
agcctagcac ctgaaggatc aatgccatca ccccgcgggg acctccccta 550
agtagcccc agaggcgctg ggagtgtgc caccgccctc ccctgaagtt 600
tgctccatct cacgctgggg gtcaacctgg ggacccttc cctcggggcc 650
atggacacac atacatgaaa accaggccgc atcgactgtc agcaccgctg 700
tggcatcttc cagtacgaga ccatctcctg caacaactgc acagactcgc 750
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cgggcatctt tcctaaagg tcccatagg gtctggttc acccatccc 1250
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tgaggtaagg ccgccctgac ctggacttca gggggagggg gtaaaggag 1400
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 ggcctcggga gaaggggtgc tcgtaagcca acaccagcgt gccgcggcct 1650
 gcacaccctt cggacatccc aggcacgagg gtgtcgtgga tgtggccaca 1700
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 aacctgacct tggaagatgc tgctgagtgt ctcaagcagc actgacagca 1900
 gctgggcctg cccagggca acgtgggggc ggagactcag ctggacagcc 1950
 cctgcctgtc actctggagc tgggctgctg ctgcctcagg accccctctc 2000
 cgaccccgga cagagctgag ctggccaggg ccaggagggc gggagggagg 2050
 gaatgggggt gggctgtgcg cagcatcagc gcctgggcag gtccgcagag 2100
 ctgcgggatg tgattaaagt ccctgatgtt tctc 2134

<210> 356
 <211> 157
 <212> PRT
 <213> Homo sapiens

<400> 356
 Met Ala Leu Leu Leu Cys Leu Val Cys Leu Thr Ala Ala Leu Ala
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 20 25 30
 Phe Tyr Arg His His Val Asn Phe Lys Ser Trp Trp Val Gly Asp
 35 40 45
 Ile Pro Val Ser Gly Ala Leu Leu Thr Asp Trp Ser Asp Asp Thr
 50 55 60
 Met Lys Glu Leu His Leu Ala Ile Pro Ala Lys Ile Thr Arg Glu
 65 70 75
 Lys Leu Asp Gln Val Ala Thr Ala Val Tyr Gln Met Met Asp Gln
 80 85 90
 Leu Tyr Gln Gly Lys Met Tyr Phe Pro Gly Tyr Phe Pro Asn Glu
 95 100 105
 Leu Arg Asn Ile Phe Arg Glu Gln Val His Leu Ile Gln Asn Ala
 110 115 120
 Ile Ile Glu Arg His Leu Ala Pro Gly Ser Trp Gly Gly Gly Gln

| | | | | | |
|---|-----|--|-----|--|-----|
| | 125 | | 130 | | 135 |
| Leu Ser Arg Glu Gly Pro Ser Leu Ala Pro Glu Gly Ser Met Pro | | | | | |
| | 140 | | 145 | | 150 |
| Ser Pro Arg Gly Asp Leu Pro | | | | | |
| | 155 | | | | |

<210> 357
 <211> 1536
 <212> DNA
 <213> Homo sapiens

<400> 357
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 ttgagaaatc ctcatatggt cctgggtgctg cccaggaacc cacgtggctc 150
 acagatgtcc cagctgccat ggaattcatt gctgccactg aggtggctgt 200
 cataggcttc ttccaggatt tagaaatacc agcagtgcc atactccata 250
 gcatgggtgca aaaattccca ggcgtgtcat ttgggatcag cactgattct 300
 gaggttctga cacactacaa catcactggg aacaccatct gcctctttcg 350
 cctggtagac aatgaacaac tgaatttaga ggacgaagac attgaaagca 400
 ttgatgccac caaattgagc cgtttcattg agatcaacag cctccacatg 450
 gtgacagagt acaaccctgt gactgtgatt gggttattca acagcgtaat 500
 tcagattcat ctctctctga taatgaacaa ggcctcccca gagtatgaag 550
 agaacatgca cagataccag aaggcagcca agctcttcca ggggaagatt 600
 ctctttattc tgggtggacag tggatatgaaa gaaaatggga aggtgatatc 650
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 ctctagatga cgagtgggat aactgcccc cagcagaagt ttccgtagag 750
 catgtgcaaa acttttgtga tggattccta agtggaaaat tgttgaaaga 800
 aaatcgtgaa tcagaaggaa agactccaaa ggtggaactc tgacttctcc 850
 ttggaactac atatggccaa gtatctactt tatgcaaagt aaaaaggcac 900
 aactcaaatc tcagagacac taaacaacag gatcactagg cctgccaacc 950
 acacacacac gcacgtgcac acacgcacgc acgcgtgcac acacacacgc 1000
 gcacacacac acacacacag agcttcattt cctgtcttaa aatctcgttt 1050
 tctcttcttc cttcttttaa atttcatatc ctactccct atccaatttc 1100

cttcttatcg tgcattcata ctctgtaagc ccatctgtaa cacacctaga 1150
 tcaaggcttt aagagactca ctgtgatgcc tctatgaaag agaggcattc 1200
 ctagagaaag attgttccaa tttgtcattt aatatcaagt ttgtatactg 1250
 cacatgactt acacacaaca tagttcctgc tcttttaagg ttacctaagg 1300
 gttgaaactc taccttcttt cataagcaca tgtccgtctc tgactcagga 1350
 tcaaaaacca aaggatggtt ttaaacacct ttgtgaaatt gtctttttgc 1400
 cagaagttaa aggctgtctc caagtccttg aactcagcag aaatagacca 1450
 tgtgaaaact ccatgcttgg ttagcatctc caactcccta tgtaaataca 1500
 caacctgcat aataaataaa aggcaatcat gttata 1536

<210> 358

<211> 273

<212> PRT

<213> Homo sapiens

<400> 358

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Ala | Pro | Ser | Arg | Phe | Met | Phe | Leu | Leu | Phe | Leu | Leu | 1 | 5 | 10 | 15 |
| Thr | Cys | Glu | Leu | Ala | Ala | Glu | Val | Ala | Ala | Glu | Val | Glu | Lys | Ser | 20 | 25 | 30 | |
| Ser | Asp | Gly | Pro | Gly | Ala | Ala | Gln | Glu | Pro | Thr | Trp | Leu | Thr | Asp | 35 | 40 | 45 | |
| Val | Pro | Ala | Ala | Met | Glu | Phe | Ile | Ala | Ala | Thr | Glu | Val | Ala | Val | 50 | 55 | 60 | |
| Ile | Gly | Phe | Phe | Gln | Asp | Leu | Glu | Ile | Pro | Ala | Val | Pro | Ile | Leu | 65 | 70 | 75 | |
| His | Ser | Met | Val | Gln | Lys | Phe | Pro | Gly | Val | Ser | Phe | Gly | Ile | Ser | 80 | 85 | 90 | |
| Thr | Asp | Ser | Glu | Val | Leu | Thr | His | Tyr | Asn | Ile | Thr | Gly | Asn | Thr | 95 | 100 | 105 | |
| Ile | Cys | Leu | Phe | Arg | Leu | Val | Asp | Asn | Glu | Gln | Leu | Asn | Leu | Glu | 110 | 115 | 120 | |
| Asp | Glu | Asp | Ile | Glu | Ser | Ile | Asp | Ala | Thr | Lys | Leu | Ser | Arg | Phe | 125 | 130 | 135 | |
| Ile | Glu | Ile | Asn | Ser | Leu | His | Met | Val | Thr | Glu | Tyr | Asn | Pro | Val | 140 | 145 | 150 | |
| Thr | Val | Ile | Gly | Leu | Phe | Asn | Ser | Val | Ile | Gln | Ile | His | Leu | Leu | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ile | Met | Asn | Lys | Ala | Ser | Pro | Glu | Tyr | Glu | Glu | Asn | Met | His | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Tyr | Gln | Lys | Ala | Ala | Lys | Leu | Phe | Gln | Gly | Lys | Ile | Leu | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Leu | Val | Asp | Ser | Gly | Met | Lys | Glu | Asn | Gly | Lys | Val | Ile | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Phe | Lys | Leu | Lys | Glu | Ser | Gln | Leu | Pro | Ala | Leu | Ala | Ile | Tyr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gln | Thr | Leu | Asp | Asp | Glu | Trp | Asp | Thr | Leu | Pro | Thr | Ala | Glu | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Val | Glu | His | Val | Gln | Asn | Phe | Cys | Asp | Gly | Phe | Leu | Ser | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Leu | Leu | Lys | Glu | Asn | Arg | Glu | Ser | Glu | Gly | Lys | Thr | Pro | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

Val Glu Leu

<210> 359

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 359

ccagcagtgc ccatactcca tagc 24

<210> 360

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 360

tgacgagtgg gatacactgc 20

<210> 361

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 361

gctctacgga aacttctgct gtgg 24

<210> 362
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 362
attcccaggc gtgtcatttg ggatcagcac tgattctgag gttctgacac 50

<210> 363
<211> 1777
<212> DNA
<213> Homo sapiens

<400> 363
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cctcagcggg gaccgggct cagggacgcg gcggcggcgg cggcgactgc 150
agtggctgga cgatggcagc gtccgccgga gccggggcgg tgattgcagc 200
cccagacagc cggcgctggc tgtggtcggt gctggcggcg gcgcttgggc 250
tcttgacagc tggagtatca gccttggaag tatatacgcc aaaagaaatc 300
ttcgtggcaa atggtacaca agggaagctg acctgcaagt tcaagtctac 350
tagtacgact ggcgggttga cctcagtctc ctggagcttc cagccagagg 400
gggcccagac tactgtgtcg tttttccact actcccaagg gcaagtgtac 450
cttgggaatt atccaccatt taaagacaga atcagctggg ctggagacct 500
tgacaagaaa gatgcatcaa tcaacataga aaatatgcag tttatacaca 550
atggcaccta tatctgtgat gtcaaaaacc ctctgacat cgttgtccag 600
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gcaggctcct cggaagtccc cctccgacac tgagggtctt gtaaagagtc 850
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tccggcggac atcacagtga caagattaac aagtcagagt ctgtggtgta 950
tgcgatatc cgaaagaatt aagagaatac ctagaacata tcctcagcaa 1000

gaaacaaaac caaactggac tctcgtgcag aaaatgtagc ccattaccac 1050
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 caattgggag atttcagaaa cattcctttc accatcattt agaaatgggt 1300
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 tggaggatgg agatgctatg atggaagcat acccaggggtg gccttttagca 1450
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 ctatgccact tgaaaacaat ttgagaagtt tttttgaagt ttttctcact 1550
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 attagcaaag gataaatgcc gaaggctcact tcattctgga cacagttgga 1700
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 cgtggagagt aaaaagtatc ggtttta 1777

<210> 364
 <211> 269
 <212> PRT
 <213> Homo sapiens

<400> 364
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 Ser Arg Arg Trp Leu Trp Ser Val Leu Ala Ala Ala Leu Gly Leu
 20 25 30
 Leu Thr Ala Gly Val Ser Ala Leu Glu Val Tyr Thr Pro Lys Glu
 35 40 45
 Ile Phe Val Ala Asn Gly Thr Gln Gly Lys Leu Thr Cys Lys Phe
 50 55 60
 Lys Ser Thr Ser Thr Thr Gly Gly Leu Thr Ser Val Ser Trp Ser
 65 70 75
 Phe Gln Pro Glu Gly Ala Asp Thr Thr Val Ser Phe Phe His Tyr
 80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Gln | Gly | Gln | Val | Tyr | Leu | Gly | Asn | Tyr | Pro | Pro | Phe | Lys | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Ile | Ser | Trp | Ala | Gly | Asp | Leu | Asp | Lys | Lys | Asp | Ala | Ser | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Ile | Glu | Asn | Met | Gln | Phe | Ile | His | Asn | Gly | Thr | Tyr | Ile | Cys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Val | Lys | Asn | Pro | Pro | Asp | Ile | Val | Val | Gln | Pro | Gly | His | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Leu | Tyr | Val | Val | Glu | Lys | Glu | Asn | Leu | Pro | Val | Phe | Pro | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Val | Val | Val | Gly | Ile | Val | Thr | Ala | Val | Val | Leu | Gly | Leu | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Leu | Ile | Ser | Met | Ile | Leu | Ala | Val | Leu | Tyr | Arg | Arg | Lys | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Lys | Arg | Asp | Tyr | Thr | Gly | Cys | Ser | Thr | Ser | Glu | Ser | Leu | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Val | Lys | Gln | Ala | Pro | Arg | Lys | Ser | Pro | Ser | Asp | Thr | Glu | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Val | Lys | Ser | Leu | Pro | Ser | Gly | Ser | His | Gln | Gly | Pro | Val | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Tyr | Ala | Gln | Leu | Asp | His | Ser | Gly | Gly | His | His | Ser | Asp | Lys | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Lys | Ser | Glu | Ser | Val | Val | Tyr | Ala | Asp | Ile | Arg | Lys | Asn | | |
| | | | | 260 | | | | | 265 | | | | | | |

<210> 365

<211> 1321

<212> DNA

<213> Homo sapiens

<400> 365

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cgggctgccg cccccggggg cttggcctca agctgcggac gacgcggggt 100

ccatcagcgc gccgggctgc cgcctctcgg ccacggctgg gtcgggggcc 150

tcgggctggg gctggggctg gcgctcgggg tgaagctggc aggtgggctg 200

aggggcgcgg ccccggcgca gtccccgcg gcccccgacc ctgaggcgtc 250

gcctctggcc gagccgccac aggagcagtc cctcgccccg tgggtctccgc 300

agaccccggc gccgccttgc tccaggtgct tcgccagagc catcgagagc 350

agccgcgacc tgctgcacag gatcaaggat gaggtgggcg caccgggcat 400

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 gttatgctga tgttgagaac cgtgtaccat gtaaaccaga gacagttatg 500
 cgaattgcta gcatcagcaa aagtctcacc atgggttgctc ttgccaaatt 550
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 aaaaaagggtg aaagaagaga aagcttataa agccttgaag atgatgaaag 750
 agaatggtgc atttgagcaa gaaaaagaag gcaaaagtaa tgaaaagaat 800
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 ttcaaaacct ggcaagaaaa agaattgattt tgaacaaggc gaattatatt 900
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 gatcctttgt tcttcaaacc tggtagtcag tttttgtatt caacttttgg 1000
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 caggaagaaa acgagccagt gatttacaat agagcaagggt aaatgaatac 1150
 cttctgctgt gtctagctat atcgcatctt aacactattht tattaattaa 1200
 aagtcaaatt ttctttgttt ccattccaaa atcaacctgc cacatttttg 1250
 gagcttttct acatgtctgt tttctcatct gtaaagtga ggaagtaaaa 1300
 catgtttata aagtaaaaaa a 1321

<210> 366

<211> 373

<212> PRT

<213> Homo sapiens

<400> 366

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Arg | Leu | Leu | Ser | Ala | Val | Thr | Ala | Arg | Ala | Ala | Ala | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Leu | Ala | Ser | Ser | Cys | Gly | Arg | Arg | Gly | Val | His | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Leu | Pro | Pro | Leu | Gly | His | Gly | Trp | Val | Gly | Gly | Leu | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Leu | Gly | Leu | Ala | Leu | Gly | Val | Lys | Leu | Ala | Gly | Gly | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | |
|-----------------|---|-----|-----|-----|
| Arg Gly Ala Ala | Pro Ala Gln Ser Pro Ala Ala Pro Asp Pro Glu | 65 | 70 | 75 |
| Ala Ser Pro Leu | Ala Glu Pro Pro Gln Glu Gln Ser Leu Ala Pro | 80 | 85 | 90 |
| Trp Ser Pro Gln | Thr Pro Ala Pro Pro Cys Ser Arg Cys Phe Ala | 95 | 100 | 105 |
| Arg Ala Ile Glu | Ser Ser Arg Asp Leu Leu His Arg Ile Lys Asp | 110 | 115 | 120 |
| Glu Val Gly Ala | Pro Gly Ile Val Val Gly Val Ser Val Asp Gly | 125 | 130 | 135 |
| Lys Glu Val Trp | Ser Glu Gly Leu Gly Tyr Ala Asp Val Glu Asn | 140 | 145 | 150 |
| Arg Val Pro Cys | Lys Pro Glu Thr Val Met Arg Ile Ala Ser Ile | 155 | 160 | 165 |
| Ser Lys Ser Leu | Thr Met Val Ala Leu Ala Lys Leu Trp Glu Ala | 170 | 175 | 180 |
| Gly Lys Leu Asp | Leu Asp Ile Pro Val Gln His Tyr Val Pro Glu | 185 | 190 | 195 |
| Phe Pro Glu Lys | Glu Tyr Glu Gly Glu Lys Val Ser Val Thr Thr | 200 | 205 | 210 |
| Arg Leu Leu Ile | Ser His Leu Ser Gly Ile Arg His Tyr Glu Lys | 215 | 220 | 225 |
| Asp Ile Lys Lys | Val Lys Glu Glu Lys Ala Tyr Lys Ala Leu Lys | 230 | 235 | 240 |
| Met Met Lys Glu | Asn Val Ala Phe Glu Gln Glu Lys Glu Gly Lys | 245 | 250 | 255 |
| Ser Asn Glu Lys | Asn Asp Phe Thr Lys Phe Lys Thr Glu Gln Glu | 260 | 265 | 270 |
| Asn Glu Ala Lys | Cys Arg Asn Ser Lys Pro Gly Lys Lys Lys Asn | 275 | 280 | 285 |
| Asp Phe Glu Gln | Gly Glu Leu Tyr Leu Arg Glu Lys Phe Glu Asn | 290 | 295 | 300 |
| Ser Ile Glu Ser | Leu Arg Leu Phe Lys Asn Asp Pro Leu Phe Phe | 305 | 310 | 315 |
| Lys Pro Gly Ser | Gln Phe Leu Tyr Ser Thr Phe Gly Tyr Thr Leu | 320 | 325 | 330 |
| Leu Ala Ala Ile | Val Glu Arg Ala Ser Gly Cys Lys Tyr Leu Asp | 335 | 340 | 345 |

Tyr Met Gln Lys Ile Phe His Asp Leu Asp Met Leu Thr Thr Val
350 355 360

Gln Glu Glu Asn Glu Pro Val Ile Tyr Asn Arg Ala Arg
365 370

<210> 367

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 367

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<211> 25

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 368

catttggtt cattctctg ctctg 25

<210> 369

<211> 28

<212> DNA

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<220>

<223> Synthetic oligonucleotide probe

<400> 369

aaaacctcag acaactcat ttgcacc 28

<210> 370

<211> 41

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 370

gtctcaccat gggtgctctt gccaaattgt gggaagcagg g 41

<210> 371

<211> 1150

<212> DNA

<213> Homo sapiens

<400> 371

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 ctggggcaac ccggctgctc ctgctcttgc tgatggcggt agcagcgccc 150
 agtcgagccc ggggcagcgg ctgccgggcc gggactgggt cgcgaggggc 200
 tggggcgga ggtcgagagg gcgaggcctg tggcacgggt gggctgctgc 250
 tggagcactc atttgagatc gatgacagt ccaacttccg gaagcggggc 300
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 gctcagcgag gaggagcggg gccgactccg ggatgtggca gccctgaatg 400
 gcctgtaccg ggtccggatc ccaaggcgac ccggggccct ggatggcctg 450
 gaagctgggt gctatgtctc ctctttgtc cctgcgtgct ccctgggtga 500
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 gccaccaca gcccaggcc ctgagacggc ggccttcatt gagcgcttg 700
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 gtcaggagcg ccagacaccg ggggccaggg tgggggtggg ggtgggggtg 850
 gtggtggggg tagtggcctt tgctgtgtgc caccctccct gtaagtctat 900
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 agcttccagc agccaaaagc aactgttggt ttggcaagac ggtcctgatg 1000
 tacaagcttg attgaaattc actgctcact tgatacgtta ttcagaaacc 1050
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<210> 372

<211> 269

<212> PRT

<213> Homo sapiens

<400> 372

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ala | Ser | Ala | Gly | Ala | Thr | Arg | Leu | Leu | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Met | Ala | Val | Ala | Ala | Pro | Ser | Arg | Ala | Arg | Gly | Ser | Gly | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Ala | Gly | Thr | Gly | Ala | Arg | Gly | Ala | Gly | Ala | Glu | Gly | Arg | Glu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Gly | Glu | Ala | Cys | Gly | Thr | Val | Gly | Leu | Leu | Leu | Glu | His | Ser | Phe | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Glu | Ile | Asp | Asp | Ser | Ala | Asn | Phe | Arg | Lys | Arg | Gly | Ser | Leu | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Trp | Asn | Gln | Gln | Asp | Gly | Thr | Leu | Ser | Leu | Ser | Gln | Arg | Gln | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Glu | Glu | Glu | Arg | Gly | Arg | Leu | Arg | Asp | Val | Ala | Ala | Leu | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Leu | Tyr | Arg | Val | Arg | Ile | Pro | Arg | Arg | Pro | Gly | Ala | Leu | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Glu | Ala | Gly | Gly | Tyr | Val | Ser | Ser | Phe | Val | Pro | Ala | Cys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Leu | Val | Glu | Ser | His | Leu | Ser | Asp | Gln | Leu | Thr | Leu | His | Val | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Val | Ala | Gly | Asn | Val | Val | Gly | Val | Ser | Val | Val | Thr | His | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Gly | Cys | Arg | Gly | His | Glu | Val | Glu | Asp | Val | Asp | Leu | Glu | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Asn | Thr | Ser | Val | Gln | Leu | Gln | Pro | Pro | Thr | Thr | Ala | Pro | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Glu | Thr | Ala | Ala | Phe | Ile | Glu | Arg | Leu | Glu | Met | Glu | Gln | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Lys | Ala | Lys | Asn | Pro | Gln | Glu | Gln | Lys | Ser | Phe | Phe | Ala | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Trp | Met | Tyr | Ile | Ile | Pro | Val | Val | Leu | Phe | Leu | Met | Met | Ser | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Ala | Pro | Asp | Thr | Gly | Gly | Gln | Gly | Gly | Gly | Gly | Gly | Gly | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Gly | Gly | Gly | Ser | Gly | Leu | Cys | Cys | Val | Pro | Pro | Ser | Leu | | |
| | | | | 260 | | | | | 265 | | | | | | |

<210> 373

<211> 1706

<212> DNA

<213> Homo sapiens

<400> 373

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cagcaggtcg tccgggggcc caccatgctg gtgactgcct accttgcttt 150
tgtaggcctc ctggcctcct gcctggggct ggaactgtca agatgcggg 200
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ctggacttct atcaggtcta cttcctggcc ctggcagctg attggcttca 300
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ctagtggcct cctcccttgt ggattggctg ggtcgcaaga attcttgtgt 450
cctcttctcc ctgacttact cactatgctg cttaaccaaa ctctctcaag 500
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gcatgacttc cctgctgagt ggatcccagc tacctttgct cgagctgcct 650
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 gactgacttt gtgactgtcc tgtgggtttct cctgccattg ctttgtgttt 1600
 gggaggacat gatgggggtg atggactgga aagaaggtgc caaaagttcc 1650
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 aaaaaa 1706

<210> 374
 <211> 450
 <212> PRT
 <213> Homo sapiens

<400> 374

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Val | Thr | Ala | Tyr | Leu | Ala | Phe | Val | Gly | Leu | Leu | Ala | Ser | 1 | 5 | 10 | 15 |
| Cys | Leu | Gly | Leu | Glu | Leu | Ser | Arg | Cys | Arg | Ala | Lys | Pro | Pro | Gly | 20 | 25 | 30 | |
| Arg | Ala | Cys | Ser | Asn | Pro | Ser | Phe | Leu | Arg | Phe | Gln | Leu | Asp | Phe | 35 | 40 | 45 | |
| Tyr | Gln | Val | Tyr | Phe | Leu | Ala | Leu | Ala | Ala | Asp | Trp | Leu | Gln | Ala | 50 | 55 | 60 | |
| Pro | Tyr | Leu | Tyr | Lys | Leu | Tyr | Gln | His | Tyr | Tyr | Phe | Leu | Glu | Gly | 65 | 70 | 75 | |
| Gln | Ile | Ala | Ile | Leu | Tyr | Val | Cys | Gly | Leu | Ala | Ser | Thr | Val | Leu | 80 | 85 | 90 | |
| Phe | Gly | Leu | Val | Ala | Ser | Ser | Leu | Val | Asp | Trp | Leu | Gly | Arg | Lys | 95 | 100 | 105 | |
| Asn | Ser | Cys | Val | Leu | Phe | Ser | Leu | Thr | Tyr | Ser | Leu | Cys | Cys | Leu | 110 | 115 | 120 | |
| Thr | Lys | Leu | Ser | Gln | Asp | Tyr | Phe | Val | Leu | Leu | Val | Gly | Arg | Ala | 125 | 130 | 135 | |
| Leu | Gly | Gly | Leu | Ser | Thr | Ala | Leu | Leu | Phe | Ser | Ala | Phe | Glu | Ala | 140 | 145 | 150 | |
| Trp | Tyr | Ile | His | Glu | His | Val | Glu | Arg | His | Asp | Phe | Pro | Ala | Glu | 155 | 160 | 165 | |
| Trp | Ile | Pro | Ala | Thr | Phe | Ala | Arg | Ala | Ala | Phe | Trp | Asn | His | Val | 170 | 175 | 180 | |
| Leu | Ala | Val | Val | Ala | Gly | Val | Ala | Ala | Glu | Ala | Val | Ala | Ser | Trp | 185 | 190 | 195 | |
| Ile | Gly | Leu | Gly | Pro | Val | Ala | Pro | Phe | Val | Ala | Ala | Ile | Pro | Leu | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Ala | Leu | Arg | Asn | Trp | Gly | Glu | Asn | 215 | 220 | 225 |
| Tyr | Asp | Arg | Gln | Arg | Ala | Phe | Ser | Arg | Thr | Cys | Ala | Gly | Gly | Leu | 230 | 235 | 240 |
| Arg | Cys | Leu | Leu | Ser | Asp | Arg | Arg | Val | Leu | Leu | Leu | Gly | Thr | Ile | 245 | 250 | 255 |
| Gln | Ala | Leu | Phe | Glu | Ser | Val | Ile | Phe | Ile | Phe | Val | Phe | Leu | Trp | 260 | 265 | 270 |
| Thr | Pro | Val | Leu | Asp | Pro | His | Gly | Ala | Pro | Leu | Gly | Ile | Ile | Phe | 275 | 280 | 285 |
| Ser | Ser | Phe | Met | Ala | Ala | Ser | Leu | Leu | Gly | Ser | Ser | Leu | Tyr | Arg | 290 | 295 | 300 |
| Ile | Ala | Thr | Ser | Lys | Arg | Tyr | His | Leu | Gln | Pro | Met | His | Leu | Leu | 305 | 310 | 315 |
| Ser | Leu | Ala | Val | Leu | Ile | Val | Val | Phe | Ser | Leu | Phe | Met | Leu | Thr | 320 | 325 | 330 |
| Phe | Ser | Thr | Ser | Pro | Gly | Gln | Glu | Ser | Pro | Val | Glu | Ser | Phe | Ile | 335 | 340 | 345 |
| Ala | Phe | Leu | Leu | Ile | Glu | Leu | Ala | Cys | Gly | Leu | Tyr | Phe | Pro | Ser | 350 | 355 | 360 |
| Met | Ser | Phe | Leu | Arg | Arg | Lys | Val | Ile | Pro | Glu | Thr | Glu | Gln | Ala | 365 | 370 | 375 |
| Gly | Val | Leu | Asn | Trp | Phe | Arg | Val | Pro | Leu | His | Ser | Leu | Ala | Cys | 380 | 385 | 390 |
| Leu | Gly | Leu | Leu | Val | Leu | His | Asp | Ser | Asp | Arg | Lys | Thr | Gly | Thr | 395 | 400 | 405 |
| Arg | Asn | Met | Phe | Ser | Ile | Cys | Ser | Ala | Val | Met | Val | Met | Ala | Leu | 410 | 415 | 420 |
| Leu | Ala | Val | Val | Gly | Leu | Phe | Thr | Val | Val | Arg | His | Asp | Ala | Glu | 425 | 430 | 435 |
| Leu | Arg | Val | Pro | Ser | Pro | Thr | Glu | Glu | Pro | Tyr | Ala | Pro | Glu | Leu | 440 | 445 | 450 |

<210> 375

<211> 1098

<212> DNA

<213> Homo sapiens

<400> 375

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 gctccccgcg tgcgtcgcgg ccacaggctt ccgtatccat gattatttgt 150
 actttcaagt gctgagtcct ggggacattc gatacatctt cacagccaca 200
 cctgccaaag actttggtgg tatctttcac acaaggtatg agcagattca 250
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 tcttcatcca ggaccagatt gctctggtgg agaggggggg ctgctccttc 350
 ctctccaaga ctcggtggt ccaggagcac ggcgggcggg cggtgatcat 400
 ctctgacaac gcagttgaca atgacagctt ctacgtggag atgatccagg 450
 acagtaccca ggcacagct gacatccccg ccctcttctt gctcggccga 500
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 aatttgaga tagcatctgg ggacaagtgg agccaggtag aggaaaagg 750
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 gcctgagagc catctgtgac ctgtcacact cacctggctc cagcctcccc 950
 taccaggggt ctctgcacag tgaccttcac agcagttggt ggagtgggtt 1000
 aaagagctgg tgtttgggga ctcaataaac cctcactgac tttttagcaa 1050
 taaagcttct catcagggtt gcaaaaaaaaa aaaaaaaaaa aaaaaaaaa 1098

<210> 376

<211> 188

<212> PRT

<213> Homo sapiens

<400> 376

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Gly | Ala | Ala | Gly | Trp | Cys | Cys | Leu | Val | Leu | Trp | Leu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| | | | | | | | | | | | | | | |
| Pro | Ala | Cys | Val | Ala | Ala | His | Gly | Phe | Arg | Ile | His | Asp | Tyr | Leu |
| | | | | 20 | | | | 25 | | | | | | 30 |
| | | | | | | | | | | | | | | |
| Tyr | Phe | Gln | Val | Leu | Ser | Pro | Gly | Asp | Ile | Arg | Tyr | Ile | Phe | Thr |
| | | | | 35 | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Thr | Pro | Ala | Lys | Asp | Phe | Gly | Gly | Ile | Phe | His | Thr | Arg | Tyr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Glu | Gln | Ile | His | Leu | Val | Pro | Ala | Glu | Pro | Pro | Glu | Ala | Cys | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Glu | Leu | Ser | Asn | Gly | Phe | Phe | Ile | Gln | Asp | Gln | Ile | Ala | Leu | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Glu | Arg | Gly | Gly | Cys | Ser | Phe | Leu | Ser | Lys | Thr | Arg | Val | Val | Gln | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | His | Gly | Gly | Arg | Ala | Val | Ile | Ile | Ser | Asp | Asn | Ala | Val | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Asp | Ser | Phe | Tyr | Val | Glu | Met | Ile | Gln | Asp | Ser | Thr | Gln | Arg | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Ala | Asp | Ile | Pro | Ala | Leu | Phe | Leu | Leu | Gly | Arg | Asp | Gly | Tyr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Met | Ile | Arg | Arg | Ser | Leu | Glu | Gln | His | Gly | Leu | Pro | Trp | Ala | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Ser | Ile | Pro | Val | Asn | Val | Thr | Ser | Ile | Pro | Thr | Phe | Glu | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Gln | Pro | Pro | Trp | Thr | Phe | Trp | | | | | | | | |
| | | | | 185 | | | | | | | | | | | |

<210> 377

<211> 496

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 396

<223> unknown base

<400> 377

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ggctggtggt gatggctggt gtgattccaa tccagggcgg gatcctgaac 100

ctgaacaaga tgggtcaagca agtgactggg aaaatgccca tcctctccta 150

ctggccctac ggctgtcact gcggactagg tggcagaggc caacccaaag 200

atgccacgga ctggtgctgc cagacccatg actgctgcta tgaccacctg 250

aagacccagg ggtgcggcat ctacaaggac aacaacaaaa gcagcatata 300

ttgtatggat ttatctcaac gctattgttt aatggctgtg tttaatgtga 350

tctatctgga aaatgaggac tccgaataaa aagctattac tawttnaaaa 400

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 496

<210> 378
<211> 116
<212> PRT
<213> Homo sapiens

<400> 378
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Gln Val Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro Tyr Gly
35 40 45
Cys His Cys Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala Thr
50 55 60
Asp Trp Cys Cys Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys
65 70 75
Thr Gln Gly Cys Gly Ile Tyr Lys Asp Asn Asn Lys Ser Ser Ile
80 85 90
His Cys Met Asp Leu Ser Gln Arg Tyr Cys Leu Met Ala Val Phe
95 100 105
Asn Val Ile Tyr Leu Glu Asn Glu Asp Ser Glu
110 115

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<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 379
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<210> 380
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<212> DNA
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<400> 380
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<210> 381

<211> 45
<212> DNA
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<400> 381
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<210> 382
<211> 764
<212> DNA
<213> Homo sapiens

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<210> 383
<211> 178
<212> PRT
<213> Homo sapiens

<400> 383
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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Leu | Gly | Gly | Pro | Thr | Trp | Ala | Gly | Lys | Met | Tyr | Gly | Pro | Gly | Gly | | | |
| | | | | 20 | | | | | 25 | | | | | 30 | | | |
| Gly | Lys | Tyr | Phe | Ser | Thr | Thr | Glu | Asp | Tyr | Asp | His | Glu | Ile | Thr | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Leu | Arg | Val | Ser | Val | Gly | Leu | Leu | Leu | Val | Lys | Ser | Val | Gln | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | |
| Val | Lys | Leu | Gly | Asp | Ser | Trp | Asp | Val | Lys | Leu | Gly | Ala | Leu | Gly | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | |
| Gly | Asn | Thr | Gln | Glu | Val | Thr | Leu | Gln | Pro | Gly | Glu | Tyr | Ile | Thr | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | |
| Lys | Val | Phe | Val | Ala | Phe | Gln | Ala | Phe | Leu | Arg | Gly | Met | Val | Met | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | |
| Tyr | Thr | Ser | Lys | Asp | Arg | Tyr | Phe | Tyr | Phe | Gly | Lys | Leu | Asp | Gly | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | |
| Gln | Ile | Ser | Ser | Ala | Tyr | Pro | Ser | Gln | Glu | Gly | Gln | Val | Leu | Val | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | |
| Gly | Ile | Tyr | Gly | Gln | Tyr | Gln | Leu | Leu | Gly | Ile | Lys | Ser | Ile | Gly | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | |
| Phe | Glu | Trp | Asn | Tyr | Pro | Leu | Glu | Glu | Pro | Thr | Thr | Glu | Pro | Pro | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | |
| Val | Asn | Leu | Thr | Tyr | Ser | Ala | Asn | Ser | Pro | Val | Gly | Arg | | | | | |
| | | | | 170 | | | | | 175 | | | | | | | | |

<210> 384
 <211> 2379
 <212> DNA
 <213> Homo sapiens

<400> 384
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 atacagatgt ggcagctcag gtagcccaa attgcctgga agaatacatc 150
 atgtttttcg ataagaagaa attgtaggat ccagtttttt ttttaaccgc 200
 cccctcccca ccccccaaaa aaactgtaaa gatgcaaaaa cgtaatatcc 250
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 tgtcagcgag ccctgactca ctacagtga gctgacaggg gctgtcatgc 450

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acaaaggatg ggtttcaatg taattaggct actgagcgga tcagctgtag 550
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aaagacagtc cctaaagcaa atgactccca gcacccagga attttatgta 1950
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 tctccctctc actttgggtgg caagatcctt ccttgctcgt tttagtgcatt 2200
 tcataataact ggtcattttc ctctcataca taatcaaccc attgaaattt 2250
 aaataccaca atcaatgtga agcttgaact ccggtttaat ataataccta 2300
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 aaaacttctt tcataggtaa aaaaaaaaaa 2379

<210> 385
 <211> 513
 <212> PRT
 <213> Homo sapiens

<400> 385
 Met Gly Phe Asn Val Ile Arg Leu Leu Ser Gly Ser Ala Val Ala
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 Leu Val Ile Ala Pro Thr Val Leu Leu Thr Met Leu Ser Ser Ala
 20 25 30
 Glu Arg Gly Cys Pro Lys Gly Cys Arg Cys Glu Gly Lys Met Val
 35 40 45
 Tyr Cys Glu Ser Gln Lys Leu Gln Glu Ile Pro Ser Ser Ile Ser
 50 55 60
 Ala Gly Cys Leu Gly Leu Ser Leu Arg Tyr Asn Ser Leu Gln Lys
 65 70 75
 Leu Lys Tyr Asn Gln Phe Lys Gly Leu Asn Gln Leu Thr Trp Leu
 80 85 90
 Tyr Leu Asp His Asn His Ile Ser Asn Ile Asp Glu Asn Ala Phe
 95 100 105
 Asn Gly Ile Arg Arg Leu Lys Glu Leu Ile Leu Ser Ser Asn Arg
 110 115 120
 Ile Ser Tyr Phe Leu Asn Asn Thr Phe Arg Pro Val Thr Asn Leu
 125 130 135
 Arg Asn Leu Asp Leu Ser Tyr Asn Gln Leu His Ser Leu Gly Ser
 140 145 150

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Glu | Gln | Phe | Arg | Gly | Leu | Arg | Lys | Leu | Leu | Ser | Leu | His | Leu | Arg | | 155 | 160 | 165 |
| Ser | Asn | Ser | Leu | Arg | Thr | Ile | Pro | Val | Arg | Ile | Phe | Gln | Asp | Cys | | 170 | 175 | 180 |
| Arg | Asn | Leu | Glu | Leu | Leu | Asp | Leu | Gly | Tyr | Asn | Arg | Ile | Arg | Ser | | 185 | 190 | 195 |
| Leu | Ala | Arg | Asn | Val | Phe | Ala | Gly | Met | Ile | Arg | Leu | Lys | Glu | Leu | | 200 | 205 | 210 |
| His | Leu | Glu | His | Asn | Gln | Phe | Ser | Lys | Leu | Asn | Leu | Ala | Leu | Phe | | 215 | 220 | 225 |
| Pro | Arg | Leu | Val | Ser | Leu | Gln | Asn | Leu | Tyr | Leu | Gln | Trp | Asn | Lys | | 230 | 235 | 240 |
| Ile | Ser | Val | Ile | Gly | Gln | Thr | Met | Ser | Trp | Thr | Trp | Ser | Ser | Leu | | 245 | 250 | 255 |
| Gln | Arg | Leu | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Ala | Phe | Ser | Gly | | 260 | 265 | 270 |
| Pro | Ser | Val | Phe | Gln | Cys | Val | Pro | Asn | Leu | Gln | Arg | Leu | Asn | Leu | | 275 | 280 | 285 |
| Asp | Ser | Asn | Lys | Leu | Thr | Phe | Ile | Gly | Gln | Glu | Ile | Leu | Asp | Ser | | 290 | 295 | 300 |
| Trp | Ile | Ser | Leu | Asn | Asp | Ile | Ser | Leu | Ala | Gly | Asn | Ile | Trp | Glu | | 305 | 310 | 315 |
| Cys | Ser | Arg | Asn | Ile | Cys | Ser | Leu | Val | Asn | Trp | Leu | Lys | Ser | Phe | | 320 | 325 | 330 |
| Lys | Gly | Leu | Arg | Glu | Asn | Thr | Ile | Ile | Cys | Ala | Ser | Pro | Lys | Glu | | 335 | 340 | 345 |
| Leu | Gln | Gly | Val | Asn | Val | Ile | Asp | Ala | Val | Lys | Asn | Tyr | Ser | Ile | | 350 | 355 | 360 |
| Cys | Gly | Lys | Ser | Thr | Thr | Glu | Arg | Phe | Asp | Leu | Ala | Arg | Ala | Leu | | 365 | 370 | 375 |
| Pro | Lys | Pro | Thr | Phe | Lys | Pro | Lys | Leu | Pro | Arg | Pro | Lys | His | Glu | | 380 | 385 | 390 |
| Ser | Lys | Pro | Pro | Leu | Pro | Pro | Thr | Val | Gly | Ala | Thr | Glu | Pro | Gly | | 395 | 400 | 405 |
| Pro | Glu | Thr | Asp | Ala | Asp | Ala | Glu | His | Ile | Ser | Phe | His | Lys | Ile | | 410 | 415 | 420 |
| Ile | Ala | Gly | Ser | Val | Ala | Leu | Phe | Leu | Ser | Val | Leu | Val | Ile | Leu | | 425 | 430 | 435 |

Leu Val Ile Tyr Val Ser Trp Lys Arg Tyr Pro Ala Ser Met Lys
440 445 450

Gln Leu Gln Gln Arg Ser Leu Met Arg Arg His Arg Lys Lys Lys
455 460 465

Arg Gln Ser Leu Lys Gln Met Thr Pro Ser Thr Gln Glu Phe Tyr
470 475 480

Val Asp Tyr Lys Pro Thr Asn Thr Glu Thr Ser Glu Met Leu Leu
485 490 495

Asn Gly Thr Gly Pro Cys Thr Tyr Asn Lys Ser Gly Ser Arg Glu
500 505 510

Cys Glu Val

<210> 386

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 386

ctgggatctg aacagtttcg gggc 24

<210> 387

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 387

ggtccccagg acatggtctg tccc 24

<210> 388

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 388

gctgagtta catttacggt ctaactccct gagaaccatc cctgtgcg 48

<210> 389

<211> 1449

<212> DNA

<213> Homo sapiens

<400> 389

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ttgactgtcc tttaaataatg tcaagatcca gacttttcag tgtcacctca 100
gcgatctcaa cgatagggat cttgtgtttg ccgctattcc agttggtgct 150
ctcggaccta ccatgcgaag aagatgaaat gtgtgtaaat tataatgacc 200
aacaccctaa tggctggtat atctggatcc tcctgctgct ggttttggtg 250
gcagctcttc tctgtggagc tgtggctctc tgcctccagt gctggctgag 300
gagaccccgga attgattctc acaggcgcac catggcagtt tttgctgttg 350
gagacttgga ctctatttat gggacagaag cagctgtgag tccaactgtt 400
ggaattcacc ttcaaactca aaccctgac ctatatcctg ttctgctcc 450
atgttttggc cctttaggct cccacctcc atatgaagaa attgtaaaaa 500
caacctgatt ttaggtgtgg attatcaatt taaagtatta acgacatctg 550
taattccaaa acatcaaatt taggaatagt tatttcagtt gttggaaatg 600
tccagagatc tattcatata gtctgaggaa ggacaattcg aaaaaagaat 650
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tctgctttaa actctttcct agcatggggg ccataaaaaat tattataatt 900
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agatagtatt tgaatgaagg tgaggggaga gagtaggaaa aagaaaagtt 1000
tggagttgaa gggtaaagga taaatgaaga ggaaaaggaa aagattacaa 1050
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ccaacacggg gagaaaagaa aatttccctt ttacagtaa tgaatgtggc 1200
ctccatagtc catagtgttt ctctggagcc tcagggcttg gcatttattg 1250
cagcatcatg ctaagaacct tcggcatagg tatctgttcc catgaggact 1300
gcagaagtag caatgagaca tcttcaagtg gcattttggc agtggccatc 1350
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<210> 390
<211> 146
<212> PRT
<213> Homo sapiens

<400> 390
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Ile Gly Ile Leu Cys Leu Pro Leu Phe Gln Leu Val Leu Ser Asp
20 25 30
Leu Pro Cys Glu Glu Asp Glu Met Cys Val Asn Tyr Asn Asp Gln
35 40 45
His Pro Asn Gly Trp Tyr Ile Trp Ile Leu Leu Leu Leu Val Leu
50 55 60
Val Ala Ala Leu Leu Cys Gly Ala Val Val Leu Cys Leu Gln Cys
65 70 75
Trp Leu Arg Arg Pro Arg Ile Asp Ser His Arg Arg Thr Met Ala
80 85 90
Val Phe Ala Val Gly Asp Leu Asp Ser Ile Tyr Gly Thr Glu Ala
95 100 105
Ala Val Ser Pro Thr Val Gly Ile His Leu Gln Thr Gln Thr Pro
110 115 120
Asp Leu Tyr Pro Val Pro Ala Pro Cys Phe Gly Pro Leu Gly Ser
125 130 135
Pro Pro Pro Tyr Glu Glu Ile Val Lys Thr Thr
140 145

<210> 391
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 391
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<210> 392
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 392

ccaaaacatg gagcaggaac agg 23

<210> 393

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

ccagttggtg ctctcggacc taccatgcga agaagatgaa atgtgtg 47

<210> 394

<211> 2340

<212> DNA

<213> Homo sapiens

<400> 394

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gacgcagctg acgcccgtt attagctctc gctgcgtcgc cccggctcag 150
aagctccgtg gcggcggcga ccgtgacgag aagcccacgg ccagctcagt 200
tctctttctac tttgggagag agagaaagtc agatgccctt tttaaactcc 250
ctcttcaaaa ctcatctcct gggtgactga gttaatagag tggatacaac 300
cttgctgaag atgaagaata tacaatattg aggatatatt tttctttttt 350
ttttcaagtc ttgatttggt gcttacctca agttaccatt tttcagtcaa 400
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gattgatgtt actgcactat acttttcaac aaccaagaca tcaaagcagt 550
gtcaagttac gtgagcaaat actagactta agcaaaagat atgttaaagc 600
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attttgcaac gattggtgaa gctggagAAC aaagttgact atattgttgt 750
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tatttattct ctatagtaac tgcttaagtg cagctagctt ctagatttag 2150
actatataga atttagatat tgtattgttc gtcattataa tatgctacca 2200
catgtagcaa taattacaat attttattaa aataaatatg tgaaatattg 2250
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acctttatgt gaagaaatta atttatgcc attgccaggt 2340

<211> 140
 <212> PRT
 <213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Thr | Ile | Ser | Arg | Lys | Asn | Met | Ser | Gln | Lys | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Leu | Val | Phe | Gly | Leu | Ile | Trp | Gly | Leu | Met | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| His | Tyr | Thr | Phe | Gln | Gln | Pro | Arg | His | Gln | Ser | Ser | Val | Lys | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Glu | Gln | Ile | Leu | Asp | Leu | Ser | Lys | Arg | Tyr | Val | Lys | Ala | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Glu | Glu | Asn | Lys | Asn | Thr | Val | Asp | Val | Glu | Asn | Gly | Ala | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Met | Ala | Gly | Tyr | Ala | Asp | Leu | Lys | Arg | Thr | Ile | Ala | Val | Leu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Asp | Ile | Leu | Gln | Arg | Leu | Val | Lys | Leu | Glu | Asn | Lys | Val | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Tyr | Ile | Val | Val | Asn | Gly | Ser | Ala | Ala | Asn | Thr | Thr | Asn | Gly | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Gly | Asn | Leu | Val | Pro | Val | Thr | Thr | Asn | Lys | Arg | Thr | Asn | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Gly | Ser | Ile | Arg | | | | | | | | | | |
| | | | | 140 | | | | | | | | | | |

<210> 396
 <211> 2639
 <212> DNA
 <213> Homo sapiens

<400> 396

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 accttcggcc ttttcgacag cttcagcctg actcgggtgg attgtagcgg 200
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 tggacctgtc ctccaaccgg ctggagatgg tgaatgagtc ggtgttggcg 300
 gggccgggct acacgacgtt ggctggcctg gatctcagcc acaacctgct 350
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<210> 397

<211> 353

<212> PRT

<213> Homo sapiens

<400> 397

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| Met | Pro | Trp | Pro | Leu | Leu | Leu | Leu | Leu | Ala | Val | Ser | Gly | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Thr | Thr | Arg | Pro | Cys | Phe | Pro | Gly | Cys | Gln | Cys | Glu | Val | Glu | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Gly | Leu | Phe | Asp | Ser | Phe | Ser | Leu | Thr | Arg | Val | Asp | Cys | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Leu | Gly | Pro | His | Ile | Met | Pro | Val | Pro | Ile | Pro | Leu | Asp | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | His | Leu | Asp | Leu | Ser | Ser | Asn | Arg | Leu | Glu | Met | Val | Asn | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Val | Leu | Ala | Gly | Pro | Gly | Tyr | Thr | Thr | Leu | Ala | Gly | Leu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | |
|-----------------|---------------------|---------------------|---------|
| Leu Ser His Asn | Leu Leu Thr Ser Ile | Ser Pro Thr Ala Phe | Ser |
| 95 | 100 | 105 | |
| Arg Leu Arg Tyr | Leu Glu Ser Leu Asp | Leu Ser His Asn Gly | Leu |
| 110 | 115 | 120 | |
| Thr Ala Leu Pro | Ala Glu Ser Phe Thr | Ser Ser Pro Leu Ser | Asp |
| 125 | 130 | 135 | |
| Val Asn Leu Ser | His Asn Gln Leu Arg | Glu Val Ser Val Ser | Ala |
| 140 | 145 | 150 | |
| Phe Thr Thr His | Ser Gln Gly Arg Ala | Leu His Val Asp | Leu Ser |
| 155 | 160 | 165 | |
| His Asn Leu Ile | His Arg Leu Val Pro | His Pro Thr Arg Ala | Gly |
| 170 | 175 | 180 | |
| Leu Pro Ala Pro | Thr Ile Gln Ser Leu | Asn Leu Ala Trp Asn | Arg |
| 185 | 190 | 195 | |
| Leu His Ala Val | Pro Asn Leu Arg Asp | Leu Pro Leu Arg Tyr | Leu |
| 200 | 205 | 210 | |
| Ser Leu Asp Gly | Asn Pro Leu Ala Val | Ile Gly Pro Gly Ala | Phe |
| 215 | 220 | 225 | |
| Ala Gly Leu Gly | Gly Leu Thr His Leu | Ser Leu Ala Ser Leu | Gln |
| 230 | 235 | 240 | |
| Arg Leu Pro Glu | Leu Ala Pro Ser Gly | Phe Arg Glu Leu Pro | Gly |
| 245 | 250 | 255 | |
| Leu Gln Val Leu | Asp Leu Ser Gly Asn | Pro Lys Leu Asn Trp | Ala |
| 260 | 265 | 270 | |
| Gly Ala Glu Val | Phe Ser Gly Leu Ser | Ser Leu Gln Glu Leu | Asp |
| 275 | 280 | 285 | |
| Leu Ser Gly Thr | Asn Leu Val Pro Leu | Pro Glu Ala Leu Leu | Leu |
| 290 | 295 | 300 | |
| His Leu Pro Ala | Leu Gln Ser Val Ser | Val Gly Gln Asp Val | Arg |
| 305 | 310 | 315 | |
| Cys Arg Arg Leu | Val Arg Glu Gly Thr | Tyr Pro Arg Arg Pro | Gly |
| 320 | 325 | 330 | |
| Ser Ser Pro Lys | Val Pro Leu His Cys | Val Asp Thr Arg Glu | Ser |
| 335 | 340 | 345 | |
| Ala Ala Arg Gly | Pro Thr Ile Leu | | |
| 350 | | | |

<210> 398

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

ccctgccagc cgagagcttc acc 23

<210> 399

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 399

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<210> 400

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 400

caaccccaag cttaactggg caggagctga ggtgttttca ggcc 44

<210> 401

<211> 1571

<212> DNA

<213> Homo sapiens

<400> 401

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gtgggtctga ggggaccaga aggggtgagct acgttggtt tctggaaggg 100

gaggctatat gcgtcaattc cccaaaacaa gttttgacat ttcccctgaa 150

atgtcattct ctatctattc actgcaagtg cctgctgttc caggccttac 200

ctgctgggca ctaacggcgg agccaggatg gggacagaat aaaggagcca 250

cgacctgtgc caccaactcg cactcagact ctgaactcag acctgaaatc 300

ttctcttcac gggagggttg gcagtttttc ttactcctgt ggtctccaga 350

tttcaggcct aagatgaaag cctctagtct tgccttcagc cttctctctg 400

ctgcgtttta tctcctatgg actccttcca ctggactgaa gacactcaat 450

ttgggaagct gtgtgatcgc cacaaacctt caggaaatac gaaatggatt 500

ttctgagata cggggcagtg tgcaagccaa agatggaaac attgacatca 550

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 gagtcacttt gaaaagctgg aacctcaggc agcagttgtg aaggctttgg 850
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 agtgatgctg ctgctaagaa tattcgaggt caagagctcc agtcttcaat 950
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<210> 402

<211> 261

<212> PRT

<213> Homo sapiens

<400> 402

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gln | Phe | Pro | Lys | Thr | Ser | Phe | Asp | Ile | Ser | Pro | Glu | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Phe | Ser | Ile | Tyr | Ser | Leu | Gln | Val | Pro | Ala | Val | Pro | Gly | Leu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Thr | Cys | Trp | Ala | Leu | Thr | Ala | Glu | Pro | Gly | Trp | Gly | Gln | Asn | Lys |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Thr | Thr | Cys | Ala | Thr | Asn | Ser | His | Ser | Asp | Ser | Glu | Leu | 50 | 55 | 60 |
| Arg | Pro | Glu | Ile | Phe | Ser | Ser | Arg | Glu | Ala | Trp | Gln | Phe | Phe | Leu | 65 | 70 | 75 |
| Leu | Leu | Trp | Ser | Pro | Asp | Phe | Arg | Pro | Lys | Met | Lys | Ala | Ser | Ser | 80 | 85 | 90 |
| Leu | Ala | Phe | Ser | Leu | Leu | Ser | Ala | Ala | Phe | Tyr | Leu | Leu | Trp | Thr | 95 | 100 | 105 |
| Pro | Ser | Thr | Gly | Leu | Lys | Thr | Leu | Asn | Leu | Gly | Ser | Cys | Val | Ile | 110 | 115 | 120 |
| Ala | Thr | Asn | Leu | Gln | Glu | Ile | Arg | Asn | Gly | Phe | Ser | Glu | Ile | Arg | 125 | 130 | 135 |
| Gly | Ser | Val | Gln | Ala | Lys | Asp | Gly | Asn | Ile | Asp | Ile | Arg | Ile | Leu | 140 | 145 | 150 |
| Arg | Arg | Thr | Glu | Ser | Leu | Gln | Asp | Thr | Lys | Pro | Ala | Asn | Arg | Cys | 155 | 160 | 165 |
| Cys | Leu | Leu | Arg | His | Leu | Leu | Arg | Leu | Tyr | Leu | Asp | Arg | Val | Phe | 170 | 175 | 180 |
| Lys | Asn | Tyr | Gln | Thr | Pro | Asp | His | Tyr | Thr | Leu | Arg | Lys | Ile | Ser | 185 | 190 | 195 |
| Ser | Leu | Ala | Asn | Ser | Phe | Leu | Thr | Ile | Lys | Lys | Asp | Leu | Arg | Leu | 200 | 205 | 210 |
| Ser | His | Ala | His | Met | Thr | Cys | His | Cys | Gly | Glu | Glu | Ala | Met | Lys | 215 | 220 | 225 |
| Lys | Tyr | Ser | Gln | Ile | Leu | Ser | His | Phe | Glu | Lys | Leu | Glu | Pro | Gln | 230 | 235 | 240 |
| Ala | Ala | Val | Val | Lys | Ala | Leu | Gly | Glu | Leu | Asp | Ile | Leu | Leu | Gln | 245 | 250 | 255 |
| Trp | Met | Glu | Glu | Thr | Glu | | | | | | | | | | 260 | | |

<210> 403

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 403

ctcctgtggt ctccagattt caggccta 28

<210> 404
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 404
agtcctcctt aagattctga tgtcaa 26

<210> 405
<211> 998
<212> DNA
<213> Homo sapiens

<400> 405
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aggcttttgc cgctgacca gagatggccc cgagcgagca aattcctact 100
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tcacaaaaac tcgactcaa atgcaaggag aagcagctct tgctcggttg 200
ggagacggtg caagagaatc tgccccctat aggggaatgg tgcgcacagc 250
cctagggatc attgaagagg aaggctttct aaagctttgg caaggagtga 300
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<210> 406
 <211> 323
 <212> PRT
 <213> Homo sapiens

<400> 406

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|----|
| Met | Ser | Val | Pro | Glu | Glu | Glu | Glu | Arg | Leu | Leu | Pro | Leu | Thr | Gln | | 1 | 5 | 10 | 15 |
| Arg | Trp | Pro | Arg | Ala | Ser | Lys | Phe | Leu | Leu | Ser | Gly | Cys | Ala | Ala | | 20 | 25 | 30 | |
| Thr | Val | Ala | Glu | Leu | Ala | Thr | Phe | Pro | Leu | Asp | Leu | Thr | Lys | Thr | | 35 | 40 | 45 | |
| Arg | Leu | Gln | Met | Gln | Gly | Glu | Ala | Ala | Leu | Ala | Arg | Leu | Gly | Asp | | 50 | 55 | 60 | |
| Gly | Ala | Arg | Glu | Ser | Ala | Pro | Tyr | Arg | Gly | Met | Val | Arg | Thr | Ala | | 65 | 70 | 75 | |
| Leu | Gly | Ile | Ile | Glu | Glu | Glu | Gly | Phe | Leu | Lys | Leu | Trp | Gln | Gly | | 80 | 85 | 90 | |
| Val | Thr | Pro | Ala | Ile | Tyr | Arg | His | Val | Val | Tyr | Ser | Gly | Gly | Arg | | 95 | 100 | 105 | |
| Met | Val | Thr | Tyr | Glu | His | Leu | Arg | Glu | Val | Val | Phe | Gly | Lys | Ser | | 110 | 115 | 120 | |
| Glu | Asp | Glu | His | Tyr | Pro | Leu | Trp | Lys | Ser | Val | Ile | Gly | Gly | Met | | 125 | 130 | 135 | |
| Met | Ala | Gly | Val | Ile | Gly | Gln | Phe | Leu | Ala | Asn | Pro | Thr | Asp | Leu | | 140 | 145 | 150 | |
| Val | Lys | Val | Gln | Met | Gln | Met | Glu | Gly | Lys | Arg | Lys | Leu | Glu | Gly | | 155 | 160 | 165 | |
| Lys | Pro | Leu | Arg | Phe | Arg | Gly | Val | His | His | Ala | Phe | Ala | Lys | Ile | | 170 | 175 | 180 | |
| Leu | Ala | Glu | Gly | Gly | Ile | Arg | Gly | Leu | Trp | Ala | Gly | Trp | Val | Pro | | 185 | 190 | 195 | |
| Asn | Ile | Gln | Arg | Ala | Ala | Leu | Val | Asn | Met | Gly | Asp | Leu | Thr | Thr | | 200 | 205 | 210 | |
| Tyr | Asp | Thr | Val | Lys | His | Tyr | Leu | Val | Leu | Asn | Thr | Pro | Leu | Glu | | 215 | 220 | 225 | |
| Asp | Asn | Ile | Met | Thr | His | Gly | Leu | Ser | Ser | Leu | Cys | Ser | Gly | Leu | | 230 | 235 | 240 | |
| Val | Ala | Ser | Ile | Leu | Gly | Thr | Pro | Ala | Asp | Val | Ile | Lys | Ser | Arg | | 245 | 250 | 255 | |

| | | |
|---|-----|-----|
| Ile Met Asn Gln Pro Arg Asp Lys Gln Gly Arg Gly Leu Leu Tyr | | |
| | 260 | 270 |
| Lys Ser Ser Thr Asp Cys Leu Ile Gln Ala Val Gln Gly Glu Gly | | |
| | 275 | 285 |
| Phe Met Ser Leu Tyr Lys Gly Phe Leu Pro Ser Trp Leu Arg Met | | |
| | 290 | 300 |
| Thr Pro Trp Ser Met Val Phe Trp Leu Thr Tyr Glu Lys Ile Arg | | |
| | 305 | 315 |
| Glu Met Ser Gly Val Ser Pro Phe | | |
| | 320 | |

<210> 407

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 407

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<211> 34

<212> DNA

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<220>

<223> Synthetic oligonucleotide probe

<400> 408

gcggaattct taaaatggac tgactccact catc 34

<210> 409

<211> 1487

<212> DNA

<213> Homo sapiens

<400> 409

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cagcatttaa tgaaaaattt atgcttaaga agtaaaaatg gcaggcttcc 150

tagataattt tcgttggcca gaatgtgaat gtattgactg gaggtagaga 200

agaaatgctg tggcatctgt tgtcgcaggt atattgtttt ttacaggctg 250

gtggataatg attgatgcag ctgtggtgta tcctaagcca gaacagttga 300

accatgcctt tcacacatgt ggtgtatttt ccacattggc tttcttcatg 350

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ataaatgctg tatccaatgc tcaggtgaga ggtgatagct atgaaagcgg 400
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tgatgtttgg gtcacttatt gcttccatgt ggattctttt tgggtgcatat 500
gttacccaaa atactgatgt ttatccggga ctagctgtgt tttttcaaaa 550
tgcacttata ttttttagca ctctgatcta caaatgttga agaaccgaag 600
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<210> 410

<211> 158

<212> PRT

<213> Homo sapiens

<400> 410

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Phe | Leu | Asp | Asn | Phe | Arg | Trp | Pro | Glu | Cys | Glu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Trp | Ser | Glu | Arg | Arg | Asn | Ala | Val | Ala | Ser | Val | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Ile | Leu | Phe | Phe | Thr | Gly | Trp | Trp | Ile | Met | Ile | Asp | Ala | Ala | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Val | Tyr | Pro | Lys | Pro | Glu | Gln | Leu | Asn | His | Ala | Phe | His | Thr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Cys | Gly | Val | Phe | Ser | Thr | Leu | Ala | Phe | Phe | Met | Ile | Asn | Ala | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Asn | Ala | Gln | Val | Arg | Gly | Asp | Ser | Tyr | Glu | Ser | Gly | Cys | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Arg | Thr | Gly | Ala | Arg | Val | Trp | Leu | Phe | Ile | Gly | Phe | Met | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Met | Phe | Gly | Ser | Leu | Ile | Ala | Ser | Met | Trp | Ile | Leu | Phe | Gly | Ala | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Tyr | Val | Thr | Gln | Asn | Thr | Asp | Val | Tyr | Pro | Gly | Leu | Ala | Val | Phe | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Phe | Gln | Asn | Ala | Leu | Ile | Phe | Phe | Ser | Thr | Leu | Ile | Tyr | Lys | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Arg | Thr | Glu | Glu | Leu | Trp | Thr | | | | | | | | |
| | | | | 155 | | | | | | | | | | | |

<210> 411
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 412
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<400> 412
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<210> 413
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<400> 413

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<210> 414

<211> 1337

<212> DNA

<213> Homo sapiens

<400> 414

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actgcatcta gaggagggcc gtctgtgagg ccactacccc tccagcaact 150

gggaggtggg actgtcagaa gctggcccag ggtggtggtc agctgggtca 200

gggacctacg gcacctgctg gaccacctcg ccttctccat cgaagcaggg 250

aagtgggagc ctcgagccct cgggtggaag ctgaccccaa gccacccttc 300

acctggacag gatgagagtg tcaggtgtgc ttcgcctcct ggccctcatc 350

tttgccatag tcacgacatg gatgtttatt cgaagctaca tgagcttcag 400

catgaaaacc atccgtctgc cacgctggct ggcagcctcg cccaccaagg 450

agatccaggt taaaaagtac aagtgtggcc tcatcaagcc ctgcccagcc 500

aactactttg cgtttaaaat ctgcagtggg gccgccaacg tcgtggggccc 550

tactatgtgc tttgaagacc gcatgatcat gagtcctgtg aaaaacaatg 600

tgggcagagg cctaaacatc gccctggtga atggaaccac gggagctgtg 650

ctgggacaga aggcatttga catgtactct ggagatgtta tgcacctagt 700

gaaattcctt aaagaaattc cgggggggtgc actggtgctg gtggcctcct 750

acgacgatcc agggaccaa atgaacgatg aaagcaggaa actcttctct 800

gacttgggga gttcctacgc aaaacaactg ggcttccggg acagctgggt 850

cttcatagga gccaaagacc tcaggggtaa aagccccttt gagcagttct 900

taaagaacag cccagacaca aacaaatacg agggatggcc agagctgctg 950

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gcaggtcctt gcacgctgtg tcgcgcctct cctcctcgga aacagaaccc 1150

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accagctgtc tgtggagaga atggggtgct ttcgtcaggg actgctgacg 1250
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tatttttgct ggttttgaaa aaaaaaaaaa aaaaaaa 1337

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<212> PRT
<213> Homo sapiens

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35 40 45
Lys Glu Ile Gln Val Lys Lys Tyr Lys Cys Gly Leu Ile Lys Pro
50 55 60
Cys Pro Ala Asn Tyr Phe Ala Phe Lys Ile Cys Ser Gly Ala Ala
65 70 75
Asn Val Val Gly Pro Thr Met Cys Phe Glu Asp Arg Met Ile Met
80 85 90
Ser Pro Val Lys Asn Asn Val Gly Arg Gly Leu Asn Ile Ala Leu
95 100 105
Val Asn Gly Thr Thr Gly Ala Val Leu Gly Gln Lys Ala Phe Asp
110 115 120
Met Tyr Ser Gly Asp Val Met His Leu Val Lys Phe Leu Lys Glu
125 130 135
Ile Pro Gly Gly Ala Leu Val Leu Val Ala Ser Tyr Asp Asp Pro
140 145 150
Gly Thr Lys Met Asn Asp Glu Ser Arg Lys Leu Phe Ser Asp Leu
155 160 165
Gly Ser Ser Tyr Ala Lys Gln Leu Gly Phe Arg Asp Ser Trp Val
170 175 180
Phe Ile Gly Ala Lys Asp Leu Arg Gly Lys Ser Pro Phe Glu Gln
185 190 195
Phe Leu Lys Asn Ser Pro Asp Thr Asn Lys Tyr Glu Gly Trp Pro
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Glu Leu Leu Glu Met Glu Gly Cys Met Pro Pro Lys Pro Phe
215 220

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<220>
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<210> 417
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<220>
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<400> 417
ggatggccag agctgctg 18

<210> 418
<211> 26
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 418
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<210> 419
<211> 24
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 419
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<210> 420
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<220>
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<400> 420
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<210> 421

<211> 46
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<220>
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<400> 421
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<210> 422
<211> 1701
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<213> Homo sapiens

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<222> 1528
<223> unknown base

<400> 422
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cacgccagga gctcgtctgc tctctctctc tctctctcac tctccctcc 200
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gcaccccttc ctgggacact atgttgttct ccgccctcct gctggagggtg 300
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acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400
cccagtcgcc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450
ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500
ggacctgcac aacaatggcc acacagtgc actctctctg cctctaccc 550
tgtatctggg tggacttccc cgaaaatatg tagctgcca gctccacctg 600
cactggggtc agaaaggatc ccagggggg tcagaacacc agatcaacag 650
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 cttccccctg gacatctctt agagaggaat ggaccaggc tgtcattcca 1450
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 gaaatcgctg tgttgtaaat gcagaganca aactctgttt agttgcaggg 1550
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 tttccctaga tatactgcgg gatctctcct taggataaag agttgctggt 1650
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<210> 423

<211> 337

<212> PRT

<213> Homo sapiens

<400> 423

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| Met | Leu | Phe | Ser | Ala | Leu | Leu | Leu | Glu | Val | Ile | Trp | Ile | Leu | Ala |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Ala | Asp | Gly | Gly | Gln | His | Trp | Thr | Tyr | Glu | Gly | Pro | His | Gly | Gln |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Asp | His | Trp | Pro | Ala | Ser | Tyr | Pro | Glu | Cys | Gly | Asn | Asn | Ala | Gln |
| | | | | 35 | | | | 40 | | | | | 45 | |
| Ser | Pro | Ile | Asp | Ile | Gln | Thr | Asp | Ser | Val | Thr | Phe | Asp | Pro | Asp |
| | | | | 50 | | | | 55 | | | | | 60 | |
| Leu | Pro | Ala | Leu | Gln | Pro | His | Gly | Tyr | Asp | Gln | Pro | Gly | Thr | Glu |
| | | | | 65 | | | | 70 | | | | | 75 | |
| Pro | Leu | Asp | Leu | His | Asn | Asn | Gly | His | Thr | Val | Gln | Leu | Ser | Leu |
| | | | | 80 | | | | 85 | | | | | 90 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ser | Thr | Leu | Tyr | Leu | Gly | Gly | Leu | Pro | Arg | Lys | Tyr | Val | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Gln | Leu | His | Leu | His | Trp | Gly | Gln | Lys | Gly | Ser | Pro | Gly | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Glu | His | Gln | Ile | Asn | Ser | Glu | Ala | Thr | Phe | Ala | Glu | Leu | His | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ile | Val | His | Tyr | Asp | Ser | Asp | Ser | Tyr | Asp | Ser | Leu | Ser | Glu | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Glu | Arg | Pro | Gln | Gly | Leu | Ala | Val | Leu | Gly | Ile | Leu | Ile | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Gly | Glu | Thr | Lys | Asn | Ile | Ala | Tyr | Glu | His | Ile | Leu | Ser | His | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | His | Glu | Val | Arg | His | Lys | Asp | Gln | Lys | Thr | Ser | Val | Pro | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Asn | Leu | Arg | Glu | Leu | Leu | Pro | Lys | Gln | Leu | Gly | Gln | Tyr | Phe | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Tyr | Asn | Gly | Ser | Leu | Thr | Thr | Pro | Pro | Cys | Tyr | Gln | Ser | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Trp | Thr | Val | Phe | Tyr | Arg | Arg | Ser | Gln | Ile | Ser | Met | Glu | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Glu | Lys | Leu | Gln | Gly | Thr | Leu | Phe | Ser | Thr | Glu | Glu | Glu | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Lys | Leu | Leu | Val | Gln | Asn | Tyr | Arg | Ala | Leu | Gln | Pro | Leu | Asn | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Arg | Met | Val | Phe | Ala | Ser | Phe | Ile | Gln | Ala | Gly | Ser | Ser | Tyr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Thr | Gly | Glu | Met | Leu | Ser | Leu | Gly | Val | Gly | Ile | Leu | Val | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Cys | Leu | Cys | Leu | Leu | Leu | Ala | Val | Tyr | Phe | Ile | Ala | Arg | Lys | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Arg | Lys | Lys | Arg | Leu | Glu | Asn | Arg | Lys | Ser | Val | Val | Phe | Thr | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ala | Gln | Ala | Thr | Thr | Glu | Ala | | | | | | | | | |
| | | | | 335 | | | | | | | | | | | |

<210> 424

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 424

gtaaagtcgc tggccagc 18

<210> 425

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 425

cccgatctgc ctgctgta 18

<210> 426

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

ctgcactgta tggccattat tgtg 24

<210> 427

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 427

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<210> 428

<211> 1073

<212> DNA

<213> Homo sapiens

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gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

aacctgcttt gggactccct cccacaaaac tggctccgga tcagggaaca 200

ctaccaaacc aacagcagtc aaatcaggtc tttccttctt taagtctgat 250

accattaaca cagatgctca cactggggcc agatctgcat ctgttaaata 300

ctgctgcagg aatgacacct ggtaccaga cccacccatt gaccctggga 350
 gggttgaatg tacaacagca actgcaccca catgtgttac caatttttgt 400
 cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450
 aaatcttcac gagcctcatc atccattcct tgttcccggg aggcattcctg 500
 cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550
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 gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900
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 aaaaaaaaaa aaaaaaaaaa aaa 1073

<210> 429

<211> 209

<212> PRT

<213> Homo sapiens

<400> 429

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ser | Thr | Ile | Leu | Leu | Phe | Cys | Leu | Leu | Gly | Ser | Thr | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Leu | Pro | Gln | Leu | Lys | Pro | Ala | Leu | Gly | Leu | Pro | Pro | Thr | Lys |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Leu | Ala | Pro | Asp | Gln | Gly | Thr | Leu | Pro | Asn | Gln | Gln | Gln | Ser | Asn |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Gln | Val | Phe | Pro | Ser | Leu | Ser | Leu | Ile | Pro | Leu | Thr | Gln | Met | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Thr | Leu | Gly | Pro | Asp | Leu | His | Leu | Leu | Asn | Pro | Ala | Ala | Gly | Met |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Pro | Gly | Thr | Gln | Thr | His | Pro | Leu | Thr | Leu | Gly | Gly | Leu | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Val | Gln | Gln | Gln | Leu | His | Pro | His | Val | Leu | Pro | Ile | Phe | Val | Thr |

| | 95 | 100 | 105 |
|-----------------|---|-----|-----|
| Gln Leu Gly Ala | Gln Gly Thr Ile Leu Ser Ser Glu Glu Leu Pro | | |
| | 110 | 115 | 120 |
| Gln Ile Phe Thr | Ser Leu Ile Ile His Ser Leu Phe Pro Gly Gly | | |
| | 125 | 130 | 135 |
| Ile Leu Pro Thr | Ser Gln Ala Gly Ala Asn Pro Asp Val Gln Asp | | |
| | 140 | 145 | 150 |
| Gly Ser Leu Pro | Ala Gly Gly Ala Gly Val Asn Pro Ala Thr Gln | | |
| | 155 | 160 | 165 |
| Gly Thr Pro Ala | Gly Arg Leu Pro Thr Pro Ser Gly Thr Asp Asp | | |
| | 170 | 175 | 180 |
| Asp Phe Ala Val | Thr Thr Pro Ala Gly Ile Gln Arg Ser Thr His | | |
| | 185 | 190 | 195 |
| Ala Ile Glu Glu | Ala Thr Thr Glu Ser Ala Asn Gly Ile Gln | | |
| | 200 | 205 | |

<210> 430

<211> 1257

<212> DNA

<213> Homo Sapien

<400> 430

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ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150
gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200
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attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700

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<211> 243
<212> PRT
<213> Homo Sapien

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Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
35 40 45
Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
50 55 60
Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
65 70 75
Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
80 85 90
Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
95 100 105
Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
110 115 120
Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
125 130 135

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

Leu Pro Lys

<210> 432

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 433

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 433

cgcaggacag ttgtgaaaat a 21

<210> 434

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 434

atgacgctcg tccaaggcca c 21

<210> 435
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 435
cccacctgta ccaccatgt 19

<210> 436
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 436
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<210> 437
<211> 19
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<220>
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<400> 437
aagggtctggc attcaagtc 19

<210> 438
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<210> 441
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